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Einführung in die Organisation

Modelle – Verfahren – Techniken

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Vorwort

Dem Leser soll ein Überblick geboten werden über das breite Thema Organisation und die damit verbundenen Fragestellungen.

Nach der Klärung des Begriffes Organisation wird ein Gesamtmodell entwickelt, das als Leitfaden für das gesamte Werk dienen soll. Alle später behandelten Teilthemen lassen sich in diesen Rahmen einordnen, der als **ibo Modell der organisatorischen Gestaltung** in der Wirtschaftspraxis heute weit verbreitet ist.

In einem weiteren grundlegenden Kapitel wird die Organisation in den Gesamtzusammenhang der Unternehmensführung eingebettet – insbesondere werden die Beziehungen von Strategie, Kultur und Technik zur Struktur (Organisation) heraus gearbeitet. Gestaltungsprinzipien und Gestaltungsbedingungen der Organisation schließen dieses Kapitel ab.

In weiteren Kapiteln werden die Elemente der Organisation und Formen der Verknüpfung dieser Elemente im Überblick dargestellt, um dann auf die Teilgebiete der sogenannten Aufbauorganisation einzugehen. Dabei handelt es sich um die Stellenbildung, das Leitungssystem, das Informationssystem, das Kommunikationssystem und das Sachmittelsystem. Insbesondere die Stellenbildung und das Leitungssystem werden ausführlicher behandelt, die restlichen Teilsysteme im Überblick dargestellt.

Ein weiteres Kapitel ist der Prozessorganisation gewidmet, das hier getrennt erörtert wird, obwohl dem Autor der unlösbare Zusammenhang zur Aufbauorganisation bewusst ist.

Ein Überblick über die Organisationsmethodik folgt. Hier wird das planmäßige Vorgehen in Organisationsprojekten behandelt. Außerdem wird eine Übersicht der Techniken geboten, die eine planmäßige Organisationsarbeit unterstützen können.

Das Buch wird abgeschlossen mit einer – viel zu kurzen – Darstellung der Rolle des Menschen in der Organisationsarbeit.

Das Werk wendet sich an Studierende unterschiedlicher Disziplinen, die sich einen Überblick über dieses Thema verschaffen wollen, und an Mitarbeiter in Unternehmen und Verwaltungen, die sich beruflich mit Organisationsfragen beschäftigen wollen oder müssen. Es soll dazu beitragen, ein vertieftes Verständnis für die vielschichtige und faszinierende Organisationsdisziplin zu schaffen, es soll Hilfen zur Lösung konkreter Fragestellungen bieten und Hinweise geben, welche Quellen für eine vertiefte Behandlung geeignet sind.

GÖTZ SCHMIDT

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1. Grundlagen der Organisation

1.1 Begriffe

1.1.1 Organisation

Der Begriff "Organisation" wird im täglichen Sprachgebrauch sehr unterschiedlich verwendet. "Organisiere mir mal einen PC" kann z.B. bedeuten, beschaffe mir einen Personal Computer, unter Umständen sogar mit dem Unterton "nicht auf dem formell vorgesehenen Weg". Die Formulierung "er ist organisiert" bedeutet nicht etwa, dass dieser Mensch seine Belange geordnet hält, sondern dass er Mitglied einer Gewerkschaft ist.

Wiederum anders verstehen normalerweise Soziologen den Organisationsbegriff. Sie bezeichnen jede zielorientierte Institution - eine Behörde, eine Unternehmung oder eine Gewerkschaft - als Organisation. Organisation im soziologischen Sinne ist also ein Oberbegriff für Institutionen, in denen Menschen zu einem bestimmten Zweck zusammenarbeiten, beispielsweise um Bürgern Dienste zu erbringen, Autos herzustellen oder Interessen von Mitgliedern zu vertreten.

Von all diesen Begriffsverwendungen soll der betriebswirtschaftliche Organisationsbegriff abgegrenzt werden. Die Inhalte der Organisation sollen an einem Beispiel verdeutlicht werden.

Ein großer Nahrungsmittelhersteller, der am Markt sehr erfolgreich gearbeitet und hohe finanzielle Überschüsse erzielt hat, beschließt, sich auf das Kerngeschäft zu konzentrieren und den Trainingsbereich, der in der Personalabteilung angesiedelt ist, auszugliedern. Das liegt insofern auf der Hand, als schon bisher die Veranstaltungen auch für Mitarbeiter anderer Unternehmungen geöffnet waren.

Ein qualifizierter Mitarbeiter aus der Personalabteilung, Herr Appel, der ein betriebswirtschaftliches Studium abgeschlossen hat, wird zum Geschäftsführer der neu gegründeten Gesellschaft **Alltrain** gemacht. Das vorhandene Seminarangebot wird eingebracht. Das Management des Nahrungsmittelherstellers erwartet von Herrn Appel, dass er nach einer Anlaufphase von ein bis zwei Jahren eine Rendite von ca. 10 % nach Abzug der Steuern auf das eingesetzte Grundkapital erwirtschaftet. Außerdem wird ein jährliches Umsatzwachstum von 10 - 12 % erwartet.

10. Methode und Techniken der Organisation

10.1 Methode

10.1.1 Einordnung der Methode

Die Methode unterstützt eine planmäßige, zielorientierte Abwicklung von Projekten (Organisation der Organisation). Als **Projekt** wurde ein Vorhaben bezeichnet, das in dieser konkreten Form **einmalig** ist und damit einen definierten Start- und Endtermin hat.

Zur Methode gehören

- die Ablauforganisation von Projekten, in der geregelt wird, welche Aufgaben in welcher zeitlichen Folge zu erledigen sind = **Projektablauf,**
- die Organisation der gedanklichen Auseinandersetzung mit dem Gegenstand des Projektes = **Systemdenken**.

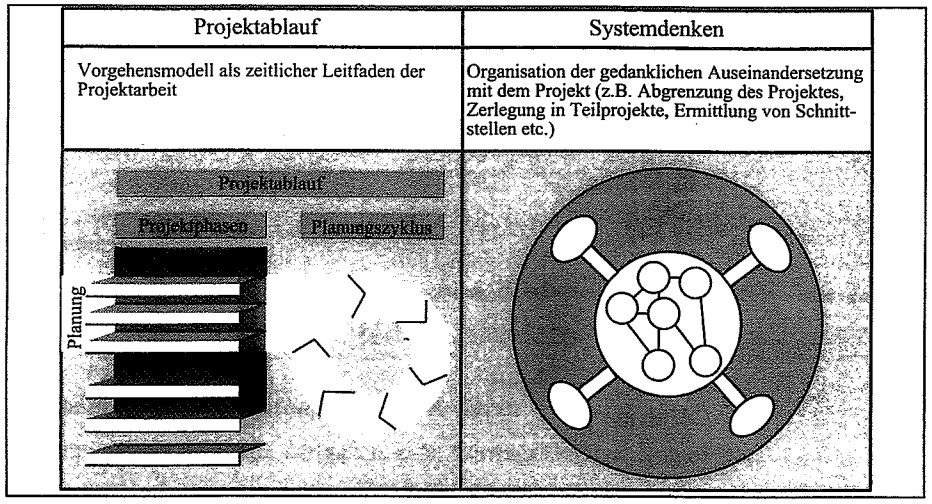

Abb. 10.1 Projektablauf und Systemdenken

10.1.2 Ziele methodischen Vorgehens

Grundsätzlich dient eine Methode dazu, ein möglichst gutes Verhältnis von Ergebnisqualität und Projektaufwand zu gewährleisten. Im Einzelnen werden die folgenden Ziele angestrebt.

Ziele	Erläuterungen
Zielorientiertes Vorgehen	Es soll sichergestellt werden, dass die Ziele der Entscheider erkannt und verfolgt werden. Erst wenn die Ziele bekannt sind, sollen geeignete Lösungen gesucht werden.
Das "richtige" Problem anfassen	Es soll Einigkeit darüber bestehen, was als Problem anzusehen ist. Es sollen nur für solche Bereiche Vorschläge erarbeitet werden, die auch verändert werden dürfen. Den Handlungsspielraum einengende Vorschriften - Randbedingungen, zwingende Vorgaben - sollen so früh wie möglich bekannt sein.
Standardisiertes Vorgehen	Die Organisationsarbeit soll sich an einem Ablaufmodell orientieren, so dass – ein standardisiertes Vorgehen möglich ist, das die Koordination aller Beteiligten erleichtert – die Grundstruktur eines Projektablaufes nicht jedes Mal wieder neu geplant werden muss.
Projektbegleitende Steuerung sicherstellen = Entscheider einbinden	Der oder die Entscheider sollen kontinuierlich den Projektfortschritt steuern - die wichtigen Weichen stellen - da – die Bearbeiter eines Projektes in der Regel über keine eigenen Entscheidungsbefugnisse verfügen (entweder sind es Stäbe oder aber nicht-entscheidungsberechtigte Mitarbeiter aus dem betroffenen Bereich) – dadurch kostspielige Fehlentwicklungen frühzeitig erkannt werden – die Entscheider den Projektfortschritt besser nachvollziehen können, was auch deren Entscheidungsfähigkeit und –bereitschaft fördert.
Beherrschen komplexer Probleme	Es soll gewährleistet werden, dass – die gedankliche Auseinandersetzung mit einem Problem systematisiert (geordnet) und vereinfacht wird – bei der Arbeit im Detail der Überblick erhalten bleibt – Einzellösungen miteinander verträglich sind - Insellösungen vermieden werden.

Rationalisierungspotenziale nutzen	Mehrfach benötigte Faktoren (Informationen, Sachmittel, Programme etc.) sollen – möglichst nur einmal entwickelt oder bereitgestellt werden – möglichst standardisiert werden.

10.1.3 Projektablauf

Der Projektablauf und das Systemdenken sind die beiden einander ergänzenden Bestandteile der Methode. Der **Projektablauf** beinhaltet ein Vorgehensmodell als **zeitlichen Leitfaden der Projektarbeit**. Er regelt somit die Bearbeitungsschritte in Projekten.

- Die Grobstruktur des Ablaufes von Projekten wird in den **Projektphasen** und die
- Feinstruktur der Planungsphasen im **Planungszyklus** geregelt.

Das hier vorgestellte Verfahren kann als **Standardablauf** für organisatorische Projekte gelten. Es wurde bewusst allgemein gehalten, um für möglichst viele unterschiedliche Projekte - auch außerhalb des Fachgebiets Organisation - anwendbar zu sein. Die Entwicklung von reinen EDV-Anwendungen folgt heute häufig anderen Mustern - vom Datenmodell oder funktionalen Entwurf über die interaktive, schrittweise Entwicklung von Anwendungsmodulen zur Einführung - die hier aber nicht dargestellt werden soll.

In der Praxis gibt es eine ganze Reihe von Varianten oder Modifikationen des hier vorgestellten Vorgehensmodells. Die meisten betriebsinternen Projektverfahren unterscheiden sich lediglich in der Bezeichnung einzelner Phasen (z.B. Grobkonzept statt Vorstudie) oder in einer mehr oder weniger feinen Untergliederung der Phasen. Allen heute verbreiteten Modellen liegt jedoch das stufenweise Vorgehen vom Groben ins Detail zugrunde, das auch wesentlicher Bestandteil des hier vorgestellten Modells ist.

Abhängig von dem konkreten Vorhaben sind gelegentlich **Modifikationen** wie z.B. die Zusammenlegung von Phasen, direkter Einstieg in spätere Phasen, Planung und Einführung von Teilprojekten etc. sinnvoll. Diese Varianten stellen aber das hier behandelte Modell nicht in Frage, sie ergänzen bzw. variieren es.

10.1.3.1 Planungszyklus

Die Planungsphasen des Vorgehensmodells werden nach dem gleichen Grundmuster abgewickelt. Sie umfassen jeweils einen oder mehrere Zyklen - d.h. eine gleichartige Folge von Bearbeitungsschritten. Innerhalb eines Zyklus sind Rückverzweigungen (Schleifen) möglich. Auch können einzelne Schritte eines Zyklus übersprungen werden, wenn die notwendigen Arbeitsergebnisse bereits vorhanden sind oder im Einzelfall nicht benötigt werden.

Auftrag

Der **Projektleiter hat dafür zu sorgen**, dass ein möglichst **vollständig formulierter Auftrag** vorliegt. Wenn er diesen Auftrag nicht in der benötigten Form bekommt, und das dürfte in der Praxis die Regel sein, ist er angehalten, einen solchen Auftrag zu entwerfen und mit dem Entscheider oder den Entscheidern für das Projekt abzustimmen. Normalerweise ist es zu Beginn eines Projektes noch nicht möglich, einen Auftrag für das gesamte Projekt zu erteilen. Es wird ein **Auftrag** für eine **erste Phase** vereinbart, der nach dem Abschluss dieser Phase wie auch der nachfolgenden Phasen dann dem Wissensstand entsprechend fortgeschrieben oder verändert wird.

Folgende **Bestandteile** gehören zu einem vollständigen **Phasenauftrag**

- Auftragsbezeichnung,
- Ziele,
- Aufbauorganisation,
  - Projektleiter,
  - Projektmitarbeiter,
  - Entscheidungsgremium.
- Projektabgrenzung (was gehört zum Projekt, was nicht),
- Restriktionen (was muss herauskommen, was darf nicht herauskommen),
- Termine (Ende der nächsten Phase),
- Budget (für die nächste Phase),
- Projektinformation (wer ist wann und wie über den Projektfortschritt zu informieren).

Ein **Auftrag** ist ein verbindlicher Vertrag für eine Projektphase zwischen dem Entscheider/den Entscheidern und dem Projektleiter.

Erhebung/Analyse

Nach der Auftragserteilung muss der **Ist-Zustand erhoben** werden, es sei denn, die relevanten Sachverhalte sind bereits bekannt. Es werden Informationen über Aufgaben, deren Volumen, Zeit und Ort des Aufgabenanfalls, über Aufgabenträger, über Sachmittel, über die Aufgabenverteilung, über Abläufe - somit die **Inhalte des Organisationswürfels** - benötigt. Es ist zu beachten, dass nicht nur Informationen über das IST sondern auch über die zukünftige Entwicklung (z.B. Entwicklung des Mengengerüstes) zu erheben sind, da organisatorische Lösungen nicht nur für heute sondern für die überschaubare Zukunft erarbeitet werden.

Die notwendige **Breite und Tiefe der Informationen hängt vom Projektfortschritt ab**. Die Regel heißt, dass in frühen Phasen des Projektes eher breit und global und in den späteren Phasen detailliert erhoben wird.

Von der Qualität der erhobenen Informationen hängt zu einem nicht unerheblichen Teil auch die Qualität der späteren Lösung ab. Zur Erhebung gibt es eine ganze Reihe von Werkzeugen, die sogenannten **Erhebungstechniken**.

Die erhobenen Informationen müssen - wenn dieses nicht bereits durch eine entsprechende Strukturierung in der Erhebung geschehen ist - zusätzlich aufbereitet, geordnet, systematisiert werden, um sie für die spätere organisatorische Gestaltung möglichst aussagefähig zu machen. Diese **Ordnung** wird als **Analyse** bezeichnet. Mit der Analyse ist keine Wertung verbunden. So gehört dazu keine Aussage darüber, ob eine Aufgabenverteilung sinnvoll ist. Das wird - zumindest gedanklich getrennt - in der folgenden Würdigung gemacht.

Würdigung (Diagnose)

Die Würdigung setzt sich wertend mit dem Ist-Zustand auseinander. Sie fragt nach Stärken und Schwächen, Chancen und Risiken der gegenwärtig vorhandenen Lösung.

	Heute	Zukunft
Positiv	Stärken	Chancen
Negativ	Schwächen	Risiken

Schwächen sind meistens der Ausgangspunkt für organisatorische Vorhaben. Weil etwas unbefriedigend ist, möchte man es ändern. Allerdings sind zu Beginn eines Projektes meistens noch nicht alle Schwächen bekannt. Sie müssen planmäßig gesucht und auf ihre Ursachen zurückgeführt werden. Intern fehlen oft Maßstäbe dafür, ob eine Lösung gut oder schlecht ist, ob also überhaupt ein Problem vorliegt. Deswegen wird auch versucht, durch einen Blick über den Zaun die eigene Position zu ermitteln. Dazu hat sich ein Ansatz bewährt, der als **Benchmarking** bezeichnet wird. Die eigene Lösung, bzw. deren Leistung wird mit dem "Besten" der Branche, evtl. sogar anderer Branchen verglichen. Die Spitzenleistung Dritter ist dann das Maß für die eigene Leistung.

Die Suche nach Schwachstellen darf aber nicht den Blick für die **Stärken** des Ist-Zustandes versperren, derer man sich oft gar nicht recht bewusst ist. Die Kenntnis der Stärken ist genauso wichtig wie die Kenntnis der Schwachstellen. Nur wenn die Stärken bekannt sind, kann dafür gesorgt werden, dass sie auch für die Zukunft erhalten bleiben.

Da organisatorische Lösungen für die überschaubare Zukunft gemacht werden, ist es wichtig, nicht nur heutige Stärken sondern auch zukünftige **Chancen**, die sich beispielsweise aus neuen Produkten oder Veränderungen des Marktes ergeben können, ebenso wie zukünftige **Risiken** bewusst zu ermitteln. Nur wenn solche Risiken frühzeitig bekannt sind, können vorbeugende Maßnahmen ergriffen bzw. Eventualmaßnahmen vorgesehen werden. Wenn Alltrain etwa das Risiko erkennt, dass zukünftig viele Inhalte nicht mehr in klassischen Seminaren vermittelt werden, dann kann Alltrain sich organisatorisch, technisch und personell auf diese Entwicklung vorbereiten.

Stärken und Schwächen, Chancen und Risiken müssen auf ihre **Ursachen** untersucht werden, um mit neuen Lösungen nicht an Symptomen zu kurieren. Sind die Ursachen für

Schwächen bekannt, ist es oftmals relativ einfach, sinnvolle Lösungen zu finden. Sind die Ursachen für Stärken bekannt, fällt es leichter, sie zu erhalten.

Nach der Ermittlung der Stärken und Schwächen, der Chancen und der Risiken sind die Ziele zu überarbeiten.

Lösungsentwurf

Der Lösungsentwurf beinhaltet die **Suche nach Varianten**, die geeignet sind, die vorher erarbeiteten Ziele zu erreichen.

Vor allem zu Beginn eines Projektes sollte die Lösungssuche breit angelegt sein. Je breiter gesucht wird, desto wahrscheinlicher ist es, eine wirklich gute Lösung zu finden. In der Praxis wird oft nur ein Weg ernsthaft verfolgt, weil die Verantwortlichen überzeugt sind, den richtigen Ansatz bereits zu kennen. Wie gut eine Lösung ist, kann jedoch erst beurteilt werden, wenn sie mit anderen Varianten verglichen wurde. Es gibt normalerweise nicht "die beste Lösung", sondern nur eine Lösung, die wichtige Ziele relativ besser erreicht als die übrigen untersuchten Varianten.

Im Lösungsentwurf kann nur auf wenige Techniken zurückgegriffen werden, dazu sind die Inhalte der Projekte zu unterschiedlich. Allgemein anwendbar sind lediglich die **Kreativitätstechniken**, d. h. Verfahrensregeln für die Suche nach neuen Ideen. Mit ihrer Hilfe werden Prozesse systematisiert, die normalerweise unbewusst ablaufen.

Bewertung und Auswahl

Wenn **Alternativen** erarbeitet wurden, sind sie zu **bewerten**. Dazu werden sie **den Zielen** gegenübergestellt. Zuvor sind die Ziele möglichst eindeutig formuliert - operationalisiert - und gewichtet worden. Als Gewichtung bezeichnet man einen Vorgang, in dem der Stellenwert der Ziele festgelegt wird. Das ist insofern nicht ganz einfach, als es dabei nicht um die Gewichte der Projektbearbeiter geht, vielmehr müssen Annahmen darüber gemacht werden, welche Zielgewichtung sowohl von den Entscheidungsberechtigten akzeptiert, als auch später z.B. von den Betroffenen, den Kunden und anderen "Zielträgern" als angemessen angesehen wird.

Die Variante wird "gewinnen", die möglichst viele wichtige Ziele erreichen hilft. Zur Gewichtung wie auch zur Bewertung kann auf verschiedene **Techniken** wie z.B. Nutzwertanalysen, Kosten-Wirksamkeitsanalysen, Wirtschaftlichkeitsrechnungen zurückgegriffen werden.

Die Bewertung wird dann dem Entscheider bzw. dem Entscheidungsgremium vorgelegt. Ob der Vorschlag akzeptiert wird, hängt zum einen von der Qualität der Lösung und der Bewertung, zum anderen aber auch davon ab, wie gut die Interessen der Entscheider bekannt waren und wie gut die "Verkaufsarbeit" (laufende Information, Argumentation, Präsentation etc.) war. Die Entscheidung durch die Projektinstanz wird dann als **Auswahl** bezeichnet.

Die wesentlichen Bestandteile des Planungszyklus werden in der folgenden Übersicht noch einmal zusammengefasst.

Bestandteile eines Planungszyklus		
Auftrag und Zielformulierung	Ziele, Restriktionen, Projektorganisation, Termine, Kosten (Budget) für diese Phase. Am Ende der Phase muss dann eine Entscheidung eingeholt/gefällt werden. Da Aufträge oft unvollständig (zu vage) oder zu sehr lösungsorientiert formuliert werden, ist ein vollständig formulierter Auftrag als Holschuld des Projektleiters anzusehen.	Wohin sollen wir?
Erhebung	Sammeln relevanter Informationen. Wesentliche Techniken sind Interviews, Fragebogen, Dokumentenstudium, Beobachtungen, Selbstaufschreibungen.	
Analyse	Ordnen des erhobenen Materials. Darstellung (Modellierung) der Problemstellung (welche Faktoren gehören zum untersuchten Bereich, wie hängen diese Faktoren zusammen, welche Faktoren wirken von außen auf das Problem?).	Wo stehen wir?
Würdigung und Zielüberarbeitung	Ermittlung von Stärken und Schwächen, Chancen und Risiken des Ist-Zustandes und deren Ursachen, um bei der Erarbeitung von Lösungsvarianten Stärken zu erhalten/auszubauen bzw. Schwächen zu beseitigen. Dieser Schritt führt zu einer Konkretisierung des Zielkataloges und gegebenenfalls zu einer Zielerweiterung oder –korrektur.	
Lösungsentwurf	Sammlung möglicher Lösungen. In einer ersten Phase sollte der Ist-Zustand ("Null-Variante") grundsätzlich auch eine mögliche Lösung sein, es sei denn, diese wäre nicht zulässig, etwa weil es gesetzliche Vorschriften gibt.	Welche Wege gibt es?
Bewertung	Die Wirkungen möglicher organisatorischer Maßnahmen werden untersucht. Den betrachteten Varianten werden die Ziele gegenübergestellt, um den Zielerreichungsgrad der Varianten zu ermitteln.	Welcher Weg ist der beste?
Auswahl	Die Auswahl schließt sich an die Bewertung an. Der Bewertungsvorschlag wird durch die Entscheidungsberechtigten überprüft. Es wird festgelegt, ob und gegebenenfalls wie weiter vorzugehen ist. Es wird ein Auftrag für die nächste Phase erteilt.	

10.1.3.2 Projektphasen

Vor dem Anstoß zum Projekt wird geprüft, ob es überhaupt in Angriff genommen werden soll (Projektwürdigkeit) und welche Priorität es im Rahmen aller Vorhaben hat (Priorisierung). Ein formelles **Projektantragsverfahren** kann bei der Vergabe von Prioritäten helfen.

Ziele und Ergebnisse der Projektphasen werden in der folgenden Übersicht dargestellt und dann erläutert.

Anstoß	Ziel	Ermittlung der Vorgaben der Projektinstanz (Entscheider) sowie der Aufbauorganisation des Projektes
	Ergebnis	Abgestimmter Auftrag
Vorstudie	Ziel	Feststellen, ob das Projekt weiter verfolgt werden soll und wenn ja, in welche Richtung
	Ergebnis	Ein bewerteter Vorschlag für die Lösungsrichtung
Hauptstudie	Ziel	Konkretisieren der Lösung in der Form von Grobkonzepten für abgegrenzte Teilprojekte
	Ergebnis	Bewertete Vorschläge für Teilprojekte
Teilstudien	Ziel	Freigabe der Realisation
	Ergebnis	Abgeschlossene Planung, ausführungsreife Detailpläne
Systembau	Ziel	Umsetzen der Planung in eine betriebsfertige Lösung
	Ergebnis	Fertiggestelltes, betriebsbereites System
Einführung	Ziel	Ein formell abgenommenes, voll funktionsfähiges System
	Ergebnis	Nutzungsfreigabe = **Projektende**
Erhaltung	Ziel	Aufrechterhaltung der technischen und funktionalen Betriebsbereitschaft
	Ergebnis	Ein angepasstes, funktionsfähiges System

Anstoß zur Vorstudie

Der Auftraggeber eines Projektes liefert normalerweise keine ausreichend präzisierte Auftragsformulierung. Vor Beginn einer Vorstudie ist deswegen zu klären, was eigent-

lich erreicht werden soll. Ergebnis dieses Klärungsprozesses ist eine verbindliche - möglichst schriftliche - Festlegung zwischen dem Entscheider für das Projekt (Projektinstanz) und dem Projektverantwortlichen. Die zu vereinbarenden Sachverhalte wurden oben bereits genannt.

Diese geforderte Formalisierung erscheint auf den ersten Blick bürokratisch. Sie zwingt jedoch den Entscheider, deutlich zu sagen, was er erreichen will. Durch dieses Vorgehen wird schon sehr früh ein Filter eingebaut, um offensichtlich wirtschaftlich nicht vertretbare Projekte abzufangen.

Nach dieser Abstimmung ist das Projekt zu registrieren und zeitlich in den Gesamtbestand der Projekte einzuplanen.

Vorstudie

Die Vorstudie hat den Zweck, zu klären

- ob das richtige Problem angepackt wird.
- ob es vernünftig ist, eine Lösung für das Problem zu suchen.
- ob die Lösung in der Umgestaltung eines bestehenden Systems oder in einer vollkommenen Neugestaltung liegt.
- auf welche Stellen und Abteilungen der Untersuchungsbereich begrenzt bleiben sollte.
- ob es Lösungen gibt, die in technischer, wirtschaftlicher und sozialer Hinsicht realisierbar erscheinen.
- ob deren Realisierung aufgrund von Zielen (Kriterien), die im Rahmen der Vorstudie zu präzisieren sind, wünschbar ist (positive und negative Wirkungen).

Um diese Aussagen treffen zu können, muss normalerweise ein **kompletter Planungszyklus** durchlaufen werden. Der Ist-Zustand muss grob erhoben und analysiert werden. Dabei ist auch die zukünftige Entwicklung zu beachten. Stärken und Schwächen des Ist-Zustandes sind ebenso zu ermitteln wie Chancen und Risiken, die sich ergeben würden, wenn der Ist-Zustand beibehalten würde. Dann sind die Ziele für das Projekt zu überarbeiten. Als Nächstes sind Lösungsvarianten zu suchen-und hinsichtlich ihrer Eignung zu bewerten. Schließlich sind die Lösungsvarianten und deren Bewertung zusammen mit einer Empfehlung der Projektinstanz vorzulegen. Wenn sie mit dem Vorschlag einverstanden ist, das Projekt in bestimmter, grob umrissener Richtung weiterzuführen oder auch es abzubrechen, wird das **weitere Vorgehen vereinbart.**

Erst nach dieser Entscheidung des Auftraggebers kann das Projekt in die zweite Stufe, die Hauptstudie, überführt werden.

Nicht alle Projekte beginnen mit einer Vorstudie. Sie ist immer dann entbehrlich, wenn in einem anderen Projekt bereits entschieden wurde, dass dieses Teilprojekt in einer bestimmten Richtung angegangen werden soll (z.B. wurde in einem früheren Projekt vereinbart, dass nacheinander in verschiedenen Bereichen die Gleitzeit eingeführt werden soll. Die Folgeprojekte, die sich mit der Umsetzung dieser Entscheidung beschäftigen, benötigen dann keine eigene Vorstudie mehr). Bei sehr kleinen Projekten wie auch bei Projekten, in denen feststeht, dass etwas getan werden muss (z.B. wegen gesetzlicher oder sonstiger Vorschriften) und wie es getan werden soll, kann eine Vorstudie unter Umständen ebenfalls entfallen.

Hauptstudie

Bei umfangreichen Vorhaben, die nicht in einem Arbeitsgang gelöst werden können, gehören folgende Aufgabenbereiche zur Hauptstudie:

- Isolierung, Abgrenzung überschaubarer Problemfelder (Teilprojekte),
- Bestimmung der Schnittstellen zwischen den Teilprojekten,
- Bestimmung der Prioritäten bzw. Reihenfolge in der Bearbeitung der Teilprojekte,
- Bearbeitung der abgegrenzten Teilprojekte,
- Integration der abgegrenzten Teilprojekte.

Für **jedes Teilprojekt** ist dazu erneut der **Planungszyklus** zu durchlaufen. Es sind detailliertere, für jedes Teilprojekt relevante Informationen zu erheben und zu analysieren, die vorgefundenen Lösungen für Teilprojekte sind zu würdigen. Für jedes Teilprojekt sind Lösungsvarianten zu erarbeiten und zu bewerten. Dabei ist zu beachten, dass für die Teilprojekte wiederum nur grobe Lösungsvarianten untersucht werden sollten, da vor der Realisierung Entscheidungen eingeholt werden müssen. Dazu sind Empfehlungen an die Projektinstanz auszusprechen, in denen auch die Abhängigkeiten zu den übrigen Teilprojekten berücksichtigt werden. Erst dann sollte die ausführungsreife Planung folgen.

Methodische Hilfen für die Abgrenzung von Teilprojekten und den Umgang mit Schnittstellen werden im Abschnitt **Systemdenken** gegeben. Durch die Zerlegung in Teilprojekte soll die komplexe Realität auf überschaubare "handliche" Problemfelder zurückgeführt werden. Dieses methodische Konzept ist gerade bei der Entwicklung umfangreicher und vielschichtiger Lösungen unentbehrlich. Der Versuch, alle Bezüge und Teilaspekte dauernd im Auge zu behalten und angemessen zu berücksichtigen, muss wegen der begrenzten Kapazität der menschlichen Informationsverarbeitung scheitern.

Teilstudien

Die bisher als Grobentwürfe aus der Hauptstudie vorliegenden Lösungen werden in der nächsten Phase detailliert. Nach Abschluss der Teilstudien liegen realisationsreife, integrierbare Teilpläne vor. Bei Bauprojekten beispielsweise Konstruktionspläne, statische Berechnungen, Schaltpläne, technische Angaben über Geräte und Maschinen usf. Diese Pläne sind von den entscheidungsberechtigten Instanzen zu genehmigen.

Bei kleineren Projekten können u.U. die Stufen Hauptstudie und Teilstudien zusammengelegt werden. Bei sehr großen Vorhaben kann jede der Stufen etliche Mitarbeiterjahre umfassen, weiter in sich gegliedert sein und permanente Zwischenentscheidungen über Fortführung und Richtung der Fortführung erfordern.

Systembau

Im Systembau werden die **Planungen** der Teilstudien **realisiert** bzw. hergestellt. Bei Bauprojekten wird der Bau ausgeführt, bei aufbauorganisatorischen Vorhaben werden Stellenbeschreibungen, Organisationspläne und Organisationsanweisungen usw. erstellt.

Einführung

Die Einführung ist die letzte Phase im Projekt. Sie steht oft unter extremem Zeitdruck. Aus diesem Grund wird sie vielfach

- nicht ausreichend vorbereitet.
- personell nicht ausreichend ausgestattet.
- in ungeeigneter Form durchgeführt.

Einsparungen bei der Einführung rächen sich normalerweise. Auftretende Fehler und der notwendige Aufwand sie zu beheben, Akzeptanzprobleme, sich daraus ergebende offene und verdeckte Widerstände sowie ständige Rückfragen verursachen Zeit-, Kosten- und oft auch Nervenaufwand, durch die der "Zeitgewinn" einer schnellen Einführung erheblich relativiert wird.

Planung der Einführung

Bei der Planung der Einführung sind folgende Punkte zu beachten:

- **Adressaten,**
- **wer** ist Träger der Einführung (zuständig für Schulung, Information, Anwenderbetreuung etc.),
- in **welcher** Form wird eingeführt,
- **wann** sind Einführungsmaßnahmen - auch vorbereitende – notwendig,
- **was** ist alles zu tun,
- **wie** können die Betroffenen "gewonnen" werden,
- in **welchen Schritten** läuft die Einführung ab?

Bei der Analyse der **Adressaten** ist zu beachten, dass oft ein sehr breiter Kreis (alle Mitarbeiter, Kunden, Lieferanten evtl. sogar "die Öffentlichkeit") allgemeine Informationen über organisatorische Vorhaben wünscht. Das Management des betroffenen Bereiches und anderer Bereiche ist ebenso zu informieren wie die eigentlich betroffenen Mitarbeiter und solche Beschäftigte, die für die Betreuung, Wartung usw. zuständig sind.

Als **Träger der Einführung** kommen die Mitarbeiter im Projekt bzw. Spezialisten aus Organisation und Datenverarbeitung in Frage, aber auch Multiplikatoren - sie werden für die Einführung speziell ausgebildet. Weit verbreitet sind Lösungen, in denen Mitarbeiter der Fachabteilungen nebenamtlich Einführungs- und Betreuungsfunktionen übernehmen. Sie werden auch als ORG/EDV-Koordinatoren bezeichnet. Vorgesetzte der Betroffenen haben sich oft als weniger geeignete Multiplikatoren herausgestellt.

In der Praxis ist die **schriftliche Einführung** organisatorischer Neuerungen weit verbreitet, obwohl immer wieder festgestellt wird, dass es häufig nicht ausreicht, nur auf diesem Wege einzuführen. Neben der Tatsache, dass Regelungen oft nicht, oder nicht ausreichend gründlich gelesen werden, spricht gegen eine nur schriftliche Einführung, dass keine Fragen beantwortet, keine Einwände behandelt, kurz, dass eine Lösung nicht "verkauft" werden kann. Oft wird auch unterschätzt, welchen subjektiv großen Aufwand, welche große Umstellung eine Neuerung für die Betroffenen bedeutet, selbst wenn es sich aus der Sicht der Planer um "kleine Fische" handelt. Die Regel sollte daher lauten, dass neben der schriftlichen Form - außer bei wirklich kleinen Sachen - immer **auch mündlich** informiert oder präsentiert werden sollte, und das möglichst in kleinen Gruppen, um auch Rückfragen zu ermutigen. Für notwendige **Schulungen** sollte ausreichend Zeit und sollten ausreichende Übungsplätze bereitgestellt werden.

Die **Einführung** sollte **projektbegleitend vorbereitet** werden, durch laufende Information über den Projektstand, indem Betroffene beteiligt und vor allem indem versucht wird, deren Wünsche soweit wie möglich zu erfüllen. Organisationsarbeit ist zu einem wesentlichen Teil auch "Verkaufsarbeit". Neben den Betroffenen müssen vor allem die Vorgesetzten und andere "starke" Mitarbeiter informiert und überzeugt werden.

Nach der eigentlichen Einführung kann es notwendig sein, die Betroffenen über einen längeren Zeitraum zu betreuen, auftretende Fehler zu beheben, kleinere Anpassungen vorzunehmen usw. Das wird als **Stabilisierung** bezeichnet.

Mit der Einführung ist das Projekt abgeschlossen. Es sollte eine formale Übergabe stattfinden - meistens nach einer kürzeren Betriebsphase. Die nach der Einführung anfallenden Aufgaben gehören nicht mehr zum Projekt.

Erhaltung

Die während der Laufzeit einer organisatorischen Lösung auftretenden Aufgaben können mit überwachen, aktualisieren und anpassen beschrieben werden. Unter Umständen ist es sinnvoll, einem Spezialisten die Betreuung eines eingeführten Verfahrens zu übertragen. Dabei könnte es sich um solche Mitarbeiter aus den Fachbereichen handeln, die bereits am Projekt als Mitglieder der Projektgruppen beteiligt waren.

Zur Erhaltung gehört auch die **Kontrolle**, inwieweit die ursprünglichen **Ziele** wirklich **erreicht** worden sind und in welchem Umfang eine vorhandene Regelung befolgt bzw. eine Anwendung überhaupt genutzt wird. Gerade in diesem Punkt gibt es oft böse Überraschungen. Derartige Kontrollen können wichtige Hinweise insbesondere für die weitere Projektplanung geben (Prioritäten, Notwendigkeit von gewünschten Neuerungen). Diese Funktionen gehören zu einem Organisationscontrolling, das in den meisten Unternehmen und Verwaltungen bis heute kaum entwickelt ist.

einer Verbesserung der Routinen oder gar zu einer Verbesserung von Entscheidungen führen, ist noch nicht ausgemacht (wenn die Überlegungen von Feldman/March (1981) zutreffen, so ist zumindest letzteres eher unwahrscheinlich). Denn auch und insbesondere für das Intranet gilt „die Feststellung, die schon auf frühe Phasen der ‚elektronischen Leistungsexplosion' zutraf, dass sich der Fortschritt vornehmlich in einer verbesserten Bereitstellung von Informationen und weniger im Angebot leistungsfähigerer methodischer Problemlösungshilfen äußert" (Frese 2002: 202).

Fragen

1. Zu welchen Änderungen der Organisationsstruktur führte der Einsatz von Computern im Bürobereich in den 70er Jahren?
2. Welche Spielräume der organisatorischen Gestaltung wurden durch den Dialogbetrieb in den 80er Jahren eröffnet?
3. Was ist das Neue an den Informations- und Kommunikationstechnologien der späten 80er Jahre? Welche Werkzeuge stellen diese Technologien zur Verfügung?
4. Welche Unterschiede weist Kommunikation über elektronische Medien gegenüber der „*Face-to-Face-Kommunikation*" auf?
5. In welchem Umfang kann eine Kommunikation über die neuen elektronischen Medien Telefon und „*Face-to-Face-Kommunikation*" substituieren?
6. Welches sind die Unterschiede zwischen den Leitbildern „umfassende Infrastruktur" und „lose verbundene professionelle Gruppen"?
7. Welche Probleme wirft eine Gestaltung nach dem Leitbild der „umfassenden Infrastruktur" auf? Welche potenziellen Vorteile sind mit einer Gestaltung nach dem Leitbild „lose verbundene professionelle Gruppen" verbunden?
8. Wodurch unterscheiden sich Groupware-Systeme von integrierter Standardsoftware?
9. Wozu wird das Intranet in Unternehmungen in erster Linie genutzt?
10. Welche Strategien des Wissensmanagements werden unterschieden?

4.7. Die Umwelt von Organisationen und organisatorischer Wandel

4.7.1. Was heißt organisatorischer Wandel und wodurch wird er ausgelöst?

Organisationsstrukturen werden geändert: Eine Verfahrensrichtlinie wird überarbeitet; die Kompetenzen einer oder mehrerer Instanzen werden ausgeweitet; neue Stellen werden geschaffen; ein Teilprodukt, das bislang in Eigenfertigung hergestellt wurde, wird „outgesourct", d. h., eigene Kapazitäten werden abgebaut und das Teilprodukt über den Markt bezogen; eine funktionale Struktur wird in eine divisionale überführt; Geschäftsbereiche, die bislang als einfache Abteilungen angesehen wurden, werden zu Profit-Centern umgewandelt, was u. a. bedeutet, dass ihnen Prozesse (Kapazitäten) zugeschlagen werden, die sie benötigen, um auf einem bestimmten Markt eigenständig operieren zu können, dass aus Abteilungsleiterstellen Stellen von Geschäftsleitern werden und dass für die Inhaber solcher Stellen ein System der leistungsabhängigen Entlohnung eingeführt wird. Wenn viele organisatorische Elemente gleichzeitig in einer umfassenderen Weise geändert werden, spricht man von einem grundlegenden organisatorischen Wandel.

Was veranlasst Unternehmungen, bestehende formale Strukturen zu ändern? Die gängige Antwort auf diese Frage ist: Die Umwelt ändert sich und das nötigt Organisationen, ihre Strukturen anzupassen. Europäische Automobilunternehmungen haben beispielsweise den Eindruck, dass japanische Automobilunternehmungen ihre Produkte billiger verkaufen können, weil sie diese aufgrund einer anderen Fertigungsorganisation kostengünstiger produzieren. Europäische Automobilunternehmungen bringt diese Erkenntnis u. U. dazu, dass sie ihre Produktion einer grundlegenden Reorganisation unterziehen. Andere Unternehmen sehen sich mit einer völlig neuen Produkttechnologie konfrontiert, die offensichtlich Wettbewerbsvorteile mit sich bringt. Beispielsweise registriert ein Uhrenhersteller, dass sich Quarzuhrwerke in der Entwicklung befinden, die wesentlich billiger sind, aber auch eine höhere Ganggenauigkeit aufweisen als die bisher verwendeten mechanischen Uhrwerke. Die Implementierung dieser neuen Technologie macht dann gravierende organisatorische Änderungen erforderlich. Oder Unternehmungen stellen fest, dass konkurrierende Unternehmungen in der Lage sind, sehr viel flexibler als sie selbst auf Kundenwünsche zu reagieren, ihre Produkte ständig zu erneuern oder Märkte im Ausland zu erobern. Derartige Beobachtungen in der Umwelt führen häufig dazu, dass die beobachtenden Unternehmungen ihre Strategie ändern und ihre Organisationsstruktur grundlegend umstellen, um diese neue Strategie besser umsetzen zu können. Öffentliche Unternehmungen wie die Bundesbahn werden privatisiert, was sie u. a. veranlasst, Personalstellen „wegzurationalisieren", sich in selbstständige Tochterunternehmungen aufzuspalten, die Marketingbereiche in allen diesen

Tochtergesellschaften auszuweiten, Entscheidungskompetenzen der Instanzen auf den unteren Ebenen zu erweitern, die Mitarbeiter einer periodischen Personalbeurteilung zu unterziehen und erfolgsabhängige Komponenten in das System der Entlohnung einzubauen.

Aus diesen Beispielen wird deutlich: Die Umwelt erzwingt *nicht unmittelbar* eine bestimmte Organisationsänderung, vielmehr legen Organisationsgestalter fest, welche organisatorischen Maßnahmen angebracht sind, damit angesichts der von ihnen wahrgenommenen Umweltänderungen die Wettbewerbsfähigkeit oder die Leistungsfähigkeit der Organisation aufrecht erhalten werden kann.

4.7.2. Wie objektiv können Umweltänderungen erfasst werden?

Neue Technologien, geänderte Kundenbedürfnisse, Marketingmaßnahmen der Konkurrenz – sind dies nicht Größen, die objektiv erfasst werden können? Und lassen objektiv bestimmbare Probleme nicht bestimmte Problemlösungen als unausweichlich erscheinen? Warum also reagieren Unternehmungen angesichts einer drohenden Krise häufig zu spät oder in der „falschen" Weise? Eine einfache (und meist nachträglich gegebene) Antwort lautet: Die Unternehmungen haben für sie wichtige Umweltentwicklungen übersehen. So einfach lässt sich das Problem aber nicht fassen.

Barr et al. (1992) analysierten über 25 Jahre hinweg zwei amerikanische Eisenbahngesellschaften, die in sehr ähnlichen Umwelten agierten. In den Geschäftsberichten dieser beiden Gesellschaften kamen jedoch sehr unterschiedliche Annahmen in Bezug auf die Umwelt und die jeweiligen Gründe für Erfolg bzw. Misserfolg zum Ausdruck. Die eine Unternehmung sah die Gründe für Schwierigkeiten vor allem in nicht beeinflussbaren und unberechenbaren Umweltentwicklungen. Diese Unternehmung verhielt sich so lange passiv, bis schließlich eine drastische Reorganisation notwendig wurde, um sie vor dem Bankrott zu retten. Die zweite Unternehmung sah vor allem interne Probleme und Anpassungsnotwendigkeiten. Es gab laufend kleinere und größere Veränderungen, zuerst im Denken der Manager, dann aber auch in der Organisationsstruktur. Darüber hinaus änderten sich des Öfteren die zentralen Effizienzmaße, je nachdem welcher Aspekt der Umwelt gerade als wichtig betrachtet wurde. Obwohl beide Unternehmungen im Wesentlichen die gleiche Umwelt hatten, interpretierten sie diese sehr unterschiedlich und ergriffen dementsprechend auch unterschiedliche Maßnahmen der organisatorischen Anpassung.

Um zu erklären, weshalb eine Organisation angesichts der von ihr wahrgenommenen Umweltänderungen bestimmte Maßnahmen ergreift, müssen drei Prozesse rekonstruiert werden: (1) Welche Merkmale der Umwelt werden von den Entscheidungsträgern einer Organisation als relevant erachtet und wie werden diese erfasst? (2) Wie werden die

wahrgenommenen Signale interpretiert? (3) Wie werden den wahrgenommenen Problemen Lösungen zugeordnet?

Wenden wir uns zunächst den Fragen (1) und (2) zu. Eine Organisation kann nicht alles, was in der Umwelt geschieht, beobachten. Es wäre im Übrigen auch in hohem Maße ineffizient, dies zu versuchen. Organisationen müssen also Entscheidungen darüber treffen, welche Informationen über die Umwelt für sie relevant sind, welche Informationen über Kunden, Wettbewerber, Lieferanten usw. regelmäßig gesammelt, welche Zeitungen und Zeitschriften ausgewertet, welche Messen, Gesprächskreise und Konferenzen besucht, welche Angebote über Managementseminare routinemäßig ausgewertet werden sollen usw. Sind diese Entscheidungen getroffen, werden bestimmte Informationen in „objektivierter" Form durch die Organisation für weitere Entscheidungen bereitgestellt. Allerdings zeigen empirische Studien, dass auch solche „objektivierten" Informationen von den Entscheidungsträgern, dem Management, verzerrt wahrgenommen werden (Mezias/Starbuck 2003) und insofern einer quasi unbewussten „Interpretation" unterliegen. Neben diesen „objektivierten" Informationen, die durch die Informationssysteme der Organisation bereitgestellt werden, gibt es noch eine Menge an Informationen, die Manager in Kontakten mit Externen mehr oder minder zufällig aufschnappen – in Gesprächen mit Kunden, bei Kongressen, im Rotary Club, in der Sauna, auf dem Tennisplatz oder an der Hotelbar – und als wichtig für ihre Unternehmung einstufen. Solche „zufälligen" Informationen in Entscheidungen der Unternehmung zum Tragen zu bringen, ist aber, wenn man nicht zum obersten Management gehört, viel schwieriger als bei institutionalisierter, d. h. regelmäßig gesammelter Information. Die Organisation ist nicht besonders gut darauf eingerichtet, auf solche Informationen zu reagieren.

Daten sprechen nie für sich, sie müssen immer interpretiert werden. Schon die Bewertung von Daten als wichtig oder unwichtig stellt eine Interpretation dar (als wichtig betrachtete Daten werden „Information" genannt). Die Interpretationen, mit denen Daten versehen werden, hängen von den Kenntnissen und Erfahrungen der interessierten Personen ab. Nehmen wir eine Zeile aus dem Wallstreet Journal:

„38.5 McDonalds MCD .34 1.2 14 6200 32 29.5 29.5 -2"

Während die meisten Menschen mit dieser Zeile nichts anfangen können, sagt sie einem Anlageberater, dass der Börsentag für McDonald's und seine Aktionäre ziemlich schlecht verlaufen ist (Daft et al. 1993). Auch bringt er diese Zahlenreihe mit den von ihm gehaltenen Beständen an McDonald's-Aktien und mit der von ihm bis zu diesem Punkt verfolgten Anlagestrategie in Verbindung. Er passt die Daten in seine *Denkschemata* ein und interpretiert sie entsprechend. Aufgrund dieser Interpretation und nicht aufgrund der Daten trifft er dann seine Entscheidung, McDonald's-Aktien in einem bestimmten Umfang zu kaufen, zu verkaufen oder abzuwarten.

In Organisationen gibt es über die Interpretationen einzelner Mitarbeiter hinaus *kollektive Interpretationsschemata:* Man hat sich darauf geeinigt, wie bestimmte Abnehmergruppen, Lieferanten oder Konkurrenten zu sehen sind, welche Prioritäten bestimmten Unternehmungszielen einzuräumen sind, welche Lösungsprinzipien beim Auftauchen bestimmter Probleme vordringlich zu verfolgen sind usw. Kollektive Interpretationsschemata bilden sich bei häufiger Interaktion fast zwangsläufig heraus (s. Abschnitt 2.2.10). Gleichgesinnte haben es leichter, sich zu koordinieren als Partner mit ganz unterschiedlichen Ansichten und Einschätzungen. Um gemeinsam handeln zu können, muss man erst ein Mindestmaß an Übereinstimmung in den Interpretationen der verschiedenen Situationen herstellen. Deshalb entwickeln Gruppen, in denen über längere Zeiträume gemeinsam gehandelt werden muss, weitgehend übereinstimmende Interpretationsschemata. „Interpretieren bedeutet, Ereignisse in der Umwelt in interne Kategorien einzuordnen, die Teil der Kultur und des Sprachsystems der Gruppe sind" (Weick 1993: 361).

Organisationen können Umwelten nur vor dem Hintergrund ihrer eigenen Erfahrungen wahrnehmen und interpretieren. So gesehen gibt es *keinen unmittelbaren Zugang zur Umwelt.* Dieser Umstand ist in der Systemtheorie mit dem Konzept der *Selbstreferenz* angesprochen (Maturana 1987; Probst 1987). Die Umwelt wird über das Wahrnehmungssystem der Organisation selektiv aufgenommen und durch das Interpretationssystem der Mitglieder gedeutet. Insoweit ist „die Umwelt" immer eine sozial *„konstruierte Wirklichkeit"* (s. Abschnitt 2.2.10). Die Informationssysteme einer Unternehmung bestimmen also auf ähnliche Weise wie die Instrumente eines U-Bootes, wie die Umwelt wahrgenommen wird. Mit anderen Instrumenten oder mit dem bloßen Auge sieht die Umwelt ganz anders aus. Und das Bild, das die Instrumente oder die Informationssysteme liefern, wird mittels der Interpretationsschemata gedeutet. Die Umwelt von Unternehmungen ist konstruiert, wie jede Wirklichkeit, die

> „im unmittelbarsten Sinne die *Konstruktion* derer ist, die diese Wirklichkeit zu entdecken und erforschen *glauben.* Anders ausgedrückt: Das vermeintlich *Ge*fundene ist ein *Er*fundenes, dessen Erfinder sich des Aktes seiner Erfindung nicht bewusst ist, sondern sie als etwas von ihm Unabhängiges zu entdecken vermeint und zur Grundlage seines ‚Wissens' und daher auch seines Handelns macht." (Watzlawick 1985: 9f.)

Nachdem wir die Fragen, in welcher Weise die Unternehmung ihre Aufmerksamkeit auf die Umwelt richtet und wie sie ihre Wahrnehmungen interpretiert, beantwortet haben, kommen wir zur dritten Frage: Wie werden den wahrgenommenen Problemen Lösungen zugeordnet? Es ist sicher nicht ungewöhnlich, dass Organisationsmitglieder zur Lösung der von ihnen wahrgenommenen Probleme selbst eine Lösung entwickeln und implementieren. Dabei werden häufig auch alternative Konzepte diskutiert. Ob eine bevorstehende Krise oder die Notwendigkeit zum Wandel in einer Unternehmung wahrgenommen wird, hängt jedoch nicht nur davon ab, dass bestimmte Fakten „richtig" erkannt und interpretiert werden. Es spricht vieles dafür, dass ein Problem erst gesehen

bzw. thematisiert wird, wenn eine Lösung am Horizont auftaucht, die auf das Problem zu passen scheint. Lösungen in Form neuer Strategien und Organisationskonzepte bestimmen dann die Art der Problemwahrnehmung, d. h., ein Problem wird überhaupt erst angesichts einer bestimmten Lösung diagnostiziert. Diese Überlegung bringt uns zu Organisationsmoden.

4.7.3. Organisationsmoden als Auslöser organisatorischen Wandels

Häufig erfahren Manager aus der Presse oder durch Hörensagen, dass Unternehmungen mit Erfolg bestimmte Organisationskonzepte angewendet haben. Sie fragen sich dann, ob sie nicht gut daran täten, dieses Konzept auch in der eigenen Unternehmung anzuwenden. Dieses Phänomen wird in der Neoinstitutionalistischen Organisationstheorie (s. Abschnitt 2.2.6) als eine Ausgangsbedingung für eine zunehmende Strukturgleichheit von Organisationen unter der Bedingung von Unsicherheit angesehen. DiMaggio und Powell (1983) argumentieren, dass sich Manager unter den Bedingungen von Unsicherheit und Uneindeutigkeit bei der Gestaltung der eigenen Organisation an den Strukturen und dem Verhalten von Organisationen orientieren, die sie selbst oder andere, etwa die Wirtschaftspresse, für erfolgreich halten. Manager haben den Eindruck, dass sie, um nicht in eine Krise zu geraten, ebenfalls ein bestimmtes Organisationskonzept realisieren sollten. Inzwischen liegt eine Vielzahl von empirischen Befunden vor, die das Argument von DiMaggio und Powell stützen. Aus solchen Kopierprozessen entstehen Organisationsmoden. Der Verlauf von Organisationsmoden lässt sich wie der von Moden generell durch „Glockenkurven" beschreiben. Zuerst sind es nur wenige Pioniere, die das neue Konzept implementieren. Zu diesen stoßen immer mehr Nachahmer, bis die Mode „out" ist und neue Moden nachgefragt werden (Kieser 1996).

Eine Organisationsmode bildet eine Arena, in der sich verschiedene Akteure tummeln – Berater, Professoren, Manager, Redakteure von Managementzeitschriften, Buchverleger, Seminarveranstalter usw. Diese Akteure können ihre individuellen Ziele – möglichst viel Gewinn, Ansehen, Einfluss, Karriere usw. – vor allem dadurch erreichen, dass sie die Arena durch das Anlocken von Publikum und weiteren Akteuren ausweiten. Dazu wenden sie vorwiegend kooperative Spielzüge an. Wettbewerb gibt es nur punktuell, etwa wenn mehrere Berater um einen Auftrag konkurrieren, nachdem sie vereint den Klienten suggeriert haben, dass eine Reorganisation unumgänglich ist. Spielregeln können noch während des Spiels weiterentwickelt werden. Spielzüge, die erfolglos bleiben, werden von anderen Akteuren mit großer Wahrscheinlichkeit nicht aufgegriffen. Wie schnell sich die Arena vergrößert, hängt entscheidend von der Attraktivität des Spiels ab, das die erste Mannschaft bietet. Die Anwender von Moden verfolgen sowohl persönliche Ziele, wie etwa Ausweitung von Einfluss, als auch Ziele der Unternehmung. (Das Konzept der Arena ist inspiriert von Ansätzen zu Spielen in Organisationen (Ortmann et al. 1990; Neuberger 1995; s. auch Abschnitt 2.2.9.)). Um

eine Arena attraktiv zu machen, gibt es kein wirksameres Mittel als einen Managementbestseller.

Eine rhetorisch gut gestaltete Kommunikation ist eminent wichtig für die Überzeugungskraft und damit die Verbreitung neuer Organisationskonzepte. Rhetorik gilt herkömmlicher Weise als die Kunst, einen Konsens in Fragen herbeizuführen, die nicht mit zwingender Beweisführung entschieden werden können. Je mehr Elemente der im Folgenden beschriebenen Rhetorik ein Managementbuch aufweist, desto größer ist seine Chance, zu einem Bestseller zu avancieren (Eccles et al. 1992):

(1) Ein *Schlüsselfaktor* wird in den Vordergrund gestellt – etwa Unternehmenskultur (Peters/Waterman 1984), (Totales) Qualitätsmanagement, Lean Production (Womack et al. 1992), Fraktale (Warnecke 1993), Netzwerke, Internes Unternehmertum (Pinchot 1985; Pinchot/Pinchot 1993), Prozesse (Hammer/Champy 1994) oder „Virtuelle Organisation" (Scholz 1997). Dieser Faktor wurde, dem jeweiligen Autor zufolge, bisher sträflich vernachlässigt, weshalb seine Entdeckung als revolutionär und als *radikaler Bruch mit den bisher gültigen Managementprinzipien* bezeichnet werden kann (was der Autor in der Regel auch nachdrücklich und ausdauernd tut).

(2) Die *Anwendung der neuen Prinzipien* wird als *unausweichlich* dargestellt, weil die alten Prinzipien angesichts der drohenden Gefahren scheitern *müssen*. Der Katalog der Bedrohungen – wahre Apokalypsen werden ausgemalt – umfasst beispielsweise kaum einzuholende Effizienzvorsprünge der ausländischen (früher insbesondere der japanischen, jetzt wieder der amerikanischen) Wirtschaft, zunehmende Dynamisierung der Märkte, immer kürzere Produktlebenszyklen, steigende Ansprüche der Kunden, die eine stärkere Kundenorientierung erforderlich machen, atemberaubende Geschwindigkeit technologischer Entwicklungen und Wertewandel.

(3) Die neuen Prinzipien werden mit *zentralen Werten des Publikums* in Verbindung gebracht – neben Effizienz etwa Schaffung von Entfaltungsmöglichkeiten für Mitarbeiter, Wettbewerbsfähigkeit der heimischen Wirtschaft, Vollbeschäftigung, Kundenzufriedenheit, Flexibilität, Kreativität und Innovationsfähigkeit der Unternehmung usw.

(4) *Der Autor belehrt die Praxis nicht, er macht lediglich auf ihre eigenen Spitzenleistungen – vor allem auf die heimischen – aufmerksam.* Das Buch „Auf der Suche nach Spitzenleistungen" (Peters/Waterman 1984) war nicht zuletzt auch deshalb erfolgreich, weil es – so die Kritiker – „Balsam für Amerikas erschüttertes Selbstbild" bereitstellte, indem es zeigte, „dass zumindest einige Amerikaner managen können" (Freeman 1985: 348; s. a. das Zitat von Peters weiter unten). Verweist der Autor auf japanische „best practice", muss er auf jeden Fall darauf aufmerksam machen, dass heimische Unternehmungen schon auf dem richtigen Wege sind, jedenfalls viel besser sind als – je nach Standort des Autors – europäische bzw. amerikanische Unternehmungen (so z. B. Womack et al. 1992). Wichtig ist auch, den Eindruck zu vermeiden, die neuen Prinzipien seien am Schreibtisch ausgeheckt worden. Die Beispiele sind grob vereinfacht und dadurch leicht fassbar dargestellt, wodurch der Autor *leichte Umsetzbarkeit suggeriert:* Wenn schon einige Beispielunternehmungen die neuen Prinzipien realisiert haben, dann muss es auch in der eigenen Unternehmung gelingen, lautet die Botschaft.

Mit der Präsentation der Beispiele ist die rhetorische Technik der *Personifizierung* verbunden (Nash 1989): Die Beispiele werden bevorzugt aus der Sicht ihrer Schöpfer dargestellt, z. B. Lean Production als meisterliche Erfindung des „jungen japanischen Ingenieurs" Eiji Toyoda und „seines Produktionsgenies" Taiichi Ohno (Womack et al. 1992: 53) und Lean Management

als in die Tat umgesetzte Vision von Percy Barnevik, „der hartnäckigste Feind der Bürokratie" (Peters 1992: 45). Dem lesenden Manager wird bestätigt, dass es auf Führung ankommt.

(5) Kein Manager muss sich schuldig fühlen, dass er selbst noch nicht auf die neuen Prinzipien gekommen ist: Alles hat sich eben radikal geändert – die Umweltbedingungen und die angemessenen Lösungen. Die alten Prinzipien waren – bis gerade jetzt – Zeugnisse eines hervorragenden Managements. Sie sind es u. U. auch im Moment noch, morgen jedoch ganz bestimmt nicht mehr. Die Pioniere gehören zu den wirklichen Ausnahmeerscheinungen. Der potenzielle Bestseller bietet *Katharsis*. Je früher sich die Manager auf den Zug schwingen, desto eher können sie sich als „Mitpioniere" fühlen.

(6) Potenzielle Bestseller zu Organisationskonzepten zeichnen sich durch eine *raffinierte Mischung von Einfachheit und Mehrdeutigkeit* aus. Die Überlegenheit der neuen Prinzipien erscheint einfach, klar und überzeugend: Dass „internes Unternehmertum" eindeutig besser ist als Bürokratie (Pinchot 1985), „Zeltorganisationen" flexibler sind als „Palastorganisationen" (diese Metapher wurde von Hedberg et al. im Jahre 1976 in die Managementwelt gesetzt und ist seitdem bis zur Unerträglichkeit strapaziert worden), dass Netzwerkorganisationen anpassungsfähiger als zentralisierte Konzerne mit aufgeblähten zentralen Stäben (Peters 1992; Bartlett/Ghoshal 1989) und „Virtuelle Organisationen" am allerflexibelsten sind (Scholz 1997), ist dem gesunden Menschenverstand unmittelbar einleuchtend. „Wenn eine neue Idee als Ergebnis des gesunden Menschenverstandes dargestellt werden kann, wird die Bedrohung für den potenziellen Anwender verringert" (Huczynski 1993: 108). Manager empfinden diese Einfachheit auch deshalb als wohltuend, weil sie ihnen in Verbindung mit den Praxisbeispielen ein überzeugendes Argumentationsmuster an die Hand gibt. Das jeweilige neue Konzept kommt ihnen auf jeden Fall einfacher und einleuchtender vor als ihre eigene Organisation, die sie meistens als viel chaotischer erleben. Sie erkennen diese eher in den abschreckenden Beispielen wieder, die vom Autor zur Kontrastierung der „richtigen" Organisation an die Wand gemalt werden. Die Einfachheit beruht auf der Einfachheit der Prinzipien oder stilisierten Beispiele, nicht auf Schilderungen der Realität.

Wie aber „Zelt-, Netzwerk- oder virtuelle Organisationen" im Detail aussehen, bleibt trotz vieler Beispiele unklar. *Die „Lösungen" sind im Grunde mehrdeutige Metaphern.* Typisch ist auch, dass neben vielen Gemeinplätzen wie „Die allerwichtigste Botschaft, die gelehrt werden muss, ist die Dauerhaftigkeit des Wandels" oder „Fortschrittliche persönliche Entwicklung nützt sowohl dem Angestellten als auch der Unternehmung" (Champy 1995: 102, 184) schwer verständliche Sätze stehen, wie etwa: „Somebody once said that the best sign of intelligence is the ability to hold two good, but contradictory ideas in one's head at the same time. More is required of management today than intelligence. Character is required, and the best sign of it – the reengineering character anyway – is not only to hold two good, contradictory ideas, but to act on them" (Champy 1995: 38). Die Mehrdeutigkeit wird weiter erhöht, wenn *viele Prinzipien* eingeführt wurden, die sich nicht ohne weiteres zu einem Gesamtbild zusammenfügen. So ist beispielsweise im Reengineering-Konzept von Hammer und Champy (1994) jedes einzelne Prinzip für sich klar und einfach und mit eingängigen Beispielen illustriert. Die Verbindungen zwischen den Prinzipien werden aber nur angedeutet.

In potenziellen Bestsellern verkaufte Konzepte sind also beides: einfach und klar, aber auch mehrdeutig, vage, widersprüchlich – Rätsel aufgebend. Mehrdeutigkeit bietet *Interpretationsspielraum*. Der Leser kann die Probleme, die er in seinem Umfeld wahrnimmt, in das Konzept projizieren bzw. das gebotene Konzept als *die* Lösung für die drängenden Probleme seiner Unternehmung interpretieren. Auch wird das *Expertentum* des Autors unterstrichen: Wäre das Konzept einfach zu realisieren, müsste man keine Experten zu Rate ziehen (unter denen der

Bestsellerautor einer der ausgewiesensten ist). Die Beratung errichtet „Kommunikationssperren" (Luhmann/Fuchs 1989) und bietet gleichzeitig Unterstützung zu deren Überwindung an.

(7) Häufig weist der Autor darauf hin, dass die Umsetzung des Konzepts mit großen Schwierigkeiten verbunden ist, dass viele Unternehmungen bei seiner Umsetzung scheitern, dass es eine *große Herausforderung* darstellt (was etwa bei Reengineering mit dem Hinweis untermauert wird, dass 50 bis 70 Prozent aller Projekte scheitern, s. Hammer/Champy 1994). Diejenigen aber, die seine Umsetzung schaffen, können mit *enormen Verbesserungen* – mit „Quantensprüngen" – rechnen. So stellt ein Reengineering-Experte „Kostensenkungen zwischen 30 und 90 Prozent, Qualitätsverbesserung zwischen 50 und 90 Prozent, Zeitverkürzungen zwischen 60 und 80 Prozent sowie Produktivitätssteigerungen um 100 Prozent" in Aussicht (Lohse 1994). Eine enorme Verbesserung verspricht auch die in Darstellungen von Lean Production regelmäßig auftauchende Formel, dass diese Organisationsform die Hälfte der Zeit und des Aufwands für die Entwicklung eines neuen Produkts, die Hälfte der Investitionen in Werkzeuge, die Hälfte des Personals in der Fertigung benötige und einen Leistungsvorteil von 2 zu 1 bei Produktivität, Qualität und Flexibilität aufweise. Die Botschaft lautet: Wenn Du Dir's nicht zutraust, gehörst Du nicht zu den wirklich guten Managern – und wenn Du Dich traust, es aber nicht klappt, dann auch nicht. Die Manager werden zu Organisationsänderungen animiert.

(8) *Leicht lesbar* muss das Buch geschrieben sein: keine Fremdwörter (außer Anglizismen), kein akademischer Jargon, kurze Sätze. Womit sich der potenzielle Bestseller freilich angenehm von wissenschaftlichen Texten oder Lehrbüchern abhebt, die häufig Wissenschaftlichkeit mit geringer Verständlichkeit gleichsetzen. Direkte Rede lockert auf, weshalb Interviews mit Topmanagern in wörtlicher Wiedergabe eingeflochten sind. Dies unterstreicht im Übrigen auch die Nähe des Autors zu den Wirtschaftsführern. Schaubilder stellen die Verbindung zur gewohnten Seminar-/Präsentationsatmosphäre her. Ist das Buch erstmal zum Bestseller avanciert, gibt es auch Video- und – für Auto fahrende Manager – Tonkassetten.

(9) Alle diese Ingredienzien nutzen nichts, wenn das *Timing* nicht stimmt. Das Buch muss den „Nerv der Manager der Zeit" treffen. Der Bestsellerautor Peters (1992) konstatiert rückblickend, dass das Timing für „Auf der Suche nach Spitzenleistungen" deshalb gut war, weil es 1982 veröffentlicht wurde, von großartigen amerikanischen Unternehmungen handeln sollte, und das mitten in einer Depression. Bis dahin hatte es immer geheißen, dass die Japaner die besseren und innovativeren Manager seien. Von dieser Botschaft hatten die Leute genug. Sie wollten endlich etwas Positives über amerikanisches Management hören.

Die Essenz von Bestsellern sind *Leitbilder:* Grundannahmen und Orientierungen, die als richtige Wahrnehmung und richtiges Denken in Bezug auf Kernprobleme der organisatorischen Gestaltung angesehen werden. Es sind einfache, auf wenige Prinzipien reduzierte Vorstellungen von der „richtigen Richtung", die sich häufig in plakativen Schlagworten wie „Lean Production", „Selbstorganisation", „Integriertes Netzwerk" (Bartlett/Ghoshal 1989) oder „Fraktale Fabrik" (Warnecke 1993) verdichten. Leitbilder sind einerseits „griffig" – mit ihrer Hilfe lässt sich leicht angeben, „worauf es ankommt" –, gleichzeitig aber auch mehrdeutig, weil sie bei den Zielen verharren und Lösungen nur sehr grob skizzieren. Leitbilder legitimieren Aktivitäten und Projekte in Organisationen, indem sie diese als vernünftig erscheinen lassen. Sie motivieren und „orchestrieren" Entscheidungsaktivitäten (Feldman/March 1981), und sie lassen sich in Umsetzungsprojekten als mikropolitische Waffen einsetzen.

Weshalb aber akzeptieren Manager auf den ersten Blick immer wieder ziemlich unkritisch die in Managementmoden enthaltenen generellen Umweltbeschreibungen und Lösungsansätze? Je nach theoretischer Perspektive fällt die Antwort auf diese Frage unterschiedlich aus. Eine erste mögliche Antwort auf diese Frage verweist auf den starken Druck, auf die Unsicherheit und auf die Angst der Manager vor Kontrollverlust (Streatfield 2001). Einerseits schüren neue populäre Managementansätze bei Managern Befürchtungen, den Anschluss zu verpassen, ihre Unternehmung in eine Krise zu führen, sie helfen ihnen zugleich aber auch, die Angst zu überwinden, indem sie ihnen „Paketlösungen" – Leitbilder – zur Verfügung stellen. Sie legitimieren, sie entheben die Manager, die sich auf sie berufen und entsprechende Aktivitäten in der Unternehmung einleiten wollen, einer ausführlichen Begründung. Sie befreien von dem Risiko, eine falsche Entscheidung zu fällen. Durch die Adoption von Organisationsmoden können Manager diese Ängste bekämpfen, ohne das Risiko laufen zu müssen, Kritik oder gar Lächerlichkeit zu provozieren, denn sie sind ja Mitglieder einer anerkannten Gruppe. Jede Mode bietet ein Sich-abheben, das immer als angemessen empfunden wird. Die Angst der Manager vor Kontrollverlust kann auch dazu beitragen, zu erklären, weshalb sie sich mitunter gleichzeitig so widersprüchlichen Moden zuwenden wie dem Reengineering, das ein völliges Umkrempeln der Organisation, harte Einschnitte, fordert, und dem „Evolutionären Management" (Probst 1987), das ausdrücklich vor „technokratischem Denken" warnt, weil es Komplexität zerstört, das System „vergewaltigt", „Paralyse durch Analyse" provoziert. Auf jeden Fall ist es auf den ersten Blick erstaunlich, dass solche Widersprüche zwischen populären Konzepten nicht problematisiert werden. Eine andere Antwort hingegen betont, dass populäre Managementkonzepte, die eine weite Verbreitung finden, nur wenig konkret sind. Ihre Kernprinzipien verbleiben abstrakt und müssen auch abstrakt bleiben, damit sie in einer Vielzahl von Organisationen anwendbar erscheinen (Strang/Meyer 1993). Das heißt, populäre Managementkonzepte, Managementmoden, müssen – wenn sie implementiert werden – angepasst, übersetzt und transponiert werden (Czarniawska/Joerges 1996; Sahlin-Andersson 1996; Boxenbaum/Battilana 2005). Sie bieten zudem die Möglichkeit einer sozialen Intervention, die schon als solches – und zwar unabhängig von der Stoßrichtung des Managementkonzepts – oft eine Steigung der Effizienz der Organisation insgesamt oder einzelner Arbeitsprozesse in der Organisation bewirken kann (Staw/Epstein 2000). Und nicht zuletzt bedeutet die Einführung eines neuen Managementkonzepts oder eines neuen strukturellen Elements auch immer die Chance für einzelne Entscheidungsträger in der Organisation ihren Einflussbereich, ihre Macht, in der Organisation zu vergrößern (s. Abschnitt 2.2.9.)

Damit ein Buch zu einem Managementkonzept zu einem Bestseller wird, muss es *Gegenstand einer öffentlichen Diskussion* werden. *Managementzeitschriften* müssen die in Bestsellern entwickelten Thesen aufgreifen. In diesem Medium wird ebenfalls die Rhetorik des personifizierten Beispiels gepflegt. Alle *Akteure* in der öffentlichen Arena

können ihre *persönlichen Ziele fördern, indem sie die jeweilige Modewelle verstärken:* Sie stellen ihre Kompetenz unter Beweis, sie befördern ihre Karriere in der Unternehmung, in der Unternehmensberatung oder im Verlag, erhöhen ihr Einkommen aus Nebentätigkeiten, steigern Umsatz und Gewinn des Seminarveranstalters usw.

Seminare bilden ein weiteres Medium – eine Arena in der Arena. Seminarveranstalter greifen neue Konzepte auf. Wer zuerst die kommende Welle wittert, hat die Nase vorn, kann seinen Marktanteil ausweiten. Verlage veröffentlichen nicht nur Managementbücher, Managementzeitschriften und Tageszeitungen mit Wirtschaftsteil, sie veranstalten auch Seminare und Kongresse. So lassen sich Modewellen durch orchestrierte Werbung und Berichterstattung zum eigenen Wohle erzeugen und verstärken. Unternehmensberatungen veranstalten ebenfalls Seminare, die sie als hervorragendes Instrument zum Marketing einer hoch komplexen Dienstleistung ansehen. Die Steigerung von Seminaren sind *Kongresse* mit vielen Beratern, Topmanagern, Organisatoren, Professoren als Referenten und mit einem Management-Guru als Stargast.

4.7.4. Dimensionen der Umwelt

4.7.4.1. Konzeption

Manager können jedoch ihre Umwelt nicht völlig nach Belieben konstruieren. Um überleben zu können, müssen ihre Organisationen Austausche mit Akteuren in ihrer Umwelt, d. h. mit anderen Organisationen und mit Individuen, in Gang bringen und aufrechterhalten. Sie sind vor allem darauf angewiesen, dass ihre Angebote Abnehmer finden und dass sie von ihnen und aus anderen Quellen Ressourcen erhalten, die sie für die Erstellung ihrer Angebote benötigen (Pfeffer/Salancik 1978). Unternehmungen brauchen Käufer ihrer Produkte oder Dienstleistungen, Rohstoffe von Lieferanten und Kredite von Banken. Politische Parteien sind auf Mitglieder, Spenden und Wählerstimmen angewiesen. Der FC Bayern München benötigt vor allem zahlende Zuschauer, Werbeverträge und Fernsehhonorare. Eine Universität kann nur existieren, wenn Studenten die von ihr angebotenen Studiengänge nachfragen und sie selbst oder öffentliche Geldgeber bereit sind, ihre Lehre und Forschung zu finanzieren. Wenn ein Gesangverein nicht mehr in der Lage ist, durch die Vermittlung von Frohsinn seine Mitglieder bei der Stange zu halten und neue Mitglieder anzuwerben, kann er dichtmachen. Porter (1996, 1999) hat ein Schema zur Analyse von Umweltbeziehungen entwickelt, das im Rahmen der strategischen Planung eingesetzt wird. Es ist zwar vornehmlich auf Produktionsunternehmungen ausgerichtet und somit nicht unbedingt auf Organisationen anderer Art anwendbar, es gibt aber Kategorien wieder, die von vielen Organisationen bei der Umweltanalyse (die immer auch Konstruktion ist) eingesetzt werden.

Abbildung 4-42 gibt die in diesem Konzept enthaltenen Umwelteinflüsse wieder (nach Porter 1999). Abnehmer und Lieferanten sind zentrale Akteure. Unternehmungen müssen in der Lage sein, ihre Produkte abzusetzen, und die erzielten Mittel müssen ausreichen, um von Lieferanten die zur Produktion erforderlichen Rohstoffe und Betriebsmittel beziehen, die Mitarbeiter entlohnen, die übrigen Kosten decken und Investitionen für die Zukunft tätigen zu können. Unternehmungen sind insoweit von Abnehmern und Lieferanten abhängig.

Je größer die Macht von Abnehmern, desto schwieriger gestaltet sich für eine Unternehmung das Problem, für ihre Produkte einen akzeptablen Preis zu erzielen; und je mächtiger ihre Lieferanten sind, desto schwieriger ist es für sie, notwendige Ressourcen zu einem akzeptablen Preis zu erhalten.

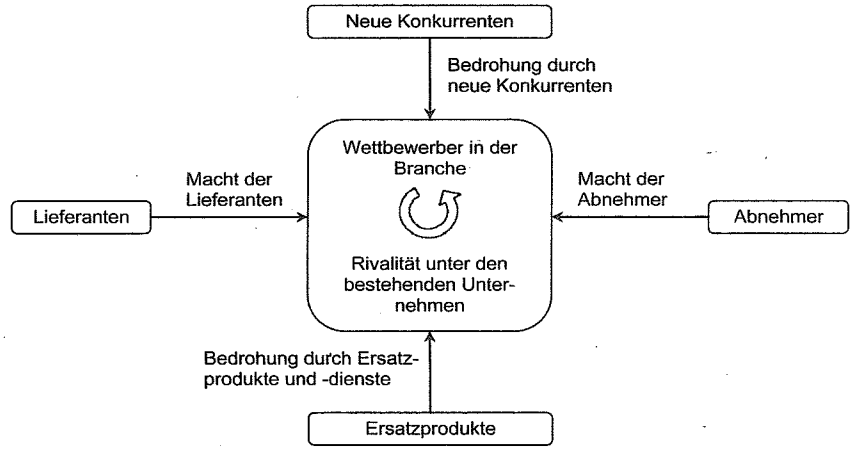

Abb. 4-42 Aus dem Wettbewerb resultierende Umwelteinflüsse einer Unternehmung

Tabelle 4-13 listet Faktoren auf, die die *Macht der Abnehmer* beeinflussen (nach Porter 1999). Sie beruht auf der Annahme, dass Abnehmer andere Unternehmungen sind; die aufgelisteten Faktoren sind jedoch im Prinzip auch auf Konsumenten anwendbar. Beispielsweise verhalten sich Konsumenten recht preisempfindlich, wenn sie Produkte kaufen, die undifferenziert – standardisiert – sind oder einen hohen Anteil des Einkommens in Anspruch nehmen.

another insight, the "reversed Parsons." An important condition for organizational ideas and recipes to become popular and adopted by a great number of organizations is that the recipes themselves have been legitimized according to widespread norms and values among the world's organizations. Such legitimizing work is mainly carried out by the authors of prescriptive management publications.

7 The Institutionalization of the Quality Management Approach in Germany

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Introduction

The body of management knowledge has grown significantly since the beginning of the industrial revolution. New management concepts have continually been developed and many of them are now seen as taken-for-granted elements of modern management even if doubts are repeatedly expressed as to whether they can contribute to an improvement in performance generally, that is, in all organizations. Nevertheless, organizations often cannot avoid adopting such institutionalized management concepts. They have to signal to their environment that they match up to the perceptions of modern management, that is, they use institutionalized management concepts.

New institutionalism in organizational analysis focuses on this problem. Its core argument is that the elements of organizational structure are less a technical means of coordinating and controlling production and exchange efficiently and more a reflection of institutionalized demands and expectations in the organizational environment (Meyer and Rowan 1977; DiMaggio and Powell 1983; Powell and DiMaggio 1991; Scott and Meyer 1994; Scott 1995). External constituents or stakeholders regard certain elements of formal structure as rational means to achieve certain desirable goals. These elements of formal structure are adopted by organizations irrespective of their effect on the performance of the organization. They serve merely to increase the legitimacy of the organization in its institutional environment (Meyer and Rowan 1977; DiMaggio and Powell 1983). An important source of funda-

mental demands concerning the design of the formal structure of an organization are the professions (Abbott 1988). They often demand organizations to comply with their respective values and standards and to implement their corresponding concepts and techniques of organization. In addition, professions are frequently supported by other external claimant-groups who also regard these elements as a means of enhancing the efficiency of organizations. As a consequence, organizations adopt these elements in order to achieve legitimacy in their institutional environment. The adoption may, in fact, become a prerequisite for the survival of the organization.

Despite its prominence, institutional theory has a number of shortcomings (Donaldson 1995; Walgenbach 1999). An important critique is that the process of institutionalization remains unexplained (Zucker 1987; Tolbert and Zucker 1996). Thus, a "metaphysical pathos" seems to be attached to the emergence of institutions (DiMaggio 1988). There have been several attempts to solve this problem conceptually (DiMaggio 1988; Oliver 1991), and there are also numerous empirical studies that identify a number of different factors influencing the process of institutionalization, such as the interests of actors (see the studies in Powell and DiMaggio 1991; Scott and Christensen 1995). However, even prominent institutionalists (Tolbert and Zucker 1996) concede that the conceptual problem remains. The discrepancy, however, lies mainly in the rejection of the rational actor model, as well as the negation of the concepts of strategic behavior and power (Oliver 1991). We want to concentrate on this problem in this chapter. We want, through an example, to investigate how a new management idea develops, how management knowledge that is linked to the idea spreads, and how the management concepts linked to the idea develop into an institution.

We propose that the process of institutionalization may be more accurately accounted for if institutional theory is combined with resource mobilization theory, as formulated by McCarthy and Zald (1987). Resource mobilization theory was developed to grasp social movements conceptually. Its core idea is that social movements are less a spontaneous than an organized phenomenon. Organizations within a movement try to ensure and increase the transfer of resources such as, for example, money, manpower, and legitimacy. Social movements attempt to ensure their existence and growth.

We argue that resource mobilization theory is particularly suitable as a complementary approach to institutional theory in order to explain the emergence of institutions. This is substantiated by the fact that the conceptual understanding of organizations, as well as the basic assumptions of both approaches, correspond. Resource mobilization theory enables processes of institutionalization to be understood, both conceptually and empirically, without having to refer to an almighty or rational actor. However, resource mobilization theory concedes much more leeway to the actor than institutional theory.

Furthermore, we will provide empirical evidence that supports the fruitfulness of resource mobilization theory as a complementary approach to institutional theory. We will present a concrete example illustrating the fruitfulness of resource mobilization theory, namely, the institutionalization of quality management (QM) in Germany. Thus, we will attempt to explain how new management ideas are developed, how they are expanded, how they are spread and become institutionalized.

The study is divided into two parts. The first part is a historical analysis in which we will present the strategies and activities of the quality-management movement that were used to anchor the value-system of the quality engineering profession in important subsystems of society. Findings from the study show that the anchorage of the movement's value system in society cannot be traced back to the activities of the quality-management movement alone but also to a weakness in the governmental system of the European Community. The European Commission considered certain management concepts and techniques developed by quality engineers as methods for overcoming those weaknesses. Due to the involvement of the European Commission, the concepts and techniques of the quality-management movement have become legitimized. As a consequence, they have become increasingly supported by other subsystems of society, such as business and science.

Our presentation of the interplay of the strategies and activities of the quality-management movement and the European Commission serves as the basis for the deduction of a number of hypotheses on the resulting process of institutionalization of QM in business and science. We will test these hypotheses in the second part of the study. We will provide a quantitative analysis of the changes in the authorship of the most important and most influential journal on QM in Germany, namely *Qualität und Zuverlässigkeit* (QZ, Quality and Reliability). The debate on quality control, quality assurance, and QM is essentially reflected in this journal, which is the organ of the quality-management movement in Germany. We assume that changes in the concepts, techniques, and understanding of QM itself, as well as in the

composition of the groups providing resources for the quality-management movement are reflected in this journal.

We assume that changes in the authorship of this journal show the evolution of the institutional field. If the strategies of the quality-management movement have been successfully realized, the pursuit of legitimation should have resulted in an increasing number of authors who are willing and able to award legitimacy to QM and the quality-management movement. If members of particular groups, such as academics, invest part of their working time, make their qualifications available, and place their reputation at the disposal of the quality-management movement by promoting QM, QM and the quality-management movement will be legitimized. Furthermore, we expect the changes in the authorship of the journal to be particularly reflected in articles on ISO 9000 and total quality management (TQM), as these approaches were used and promoted by the European Commission and had, therefore, already been legitimized.[1]

Both empirical sections are preceded by a description of the respective database and the applied methods. At the end of the paper we will discuss the results of the study.

Resource Mobilization Theory

Many authors have recently referred to theories of social movements to explain the emergence of new industries and institutions (Carroll 1996; Barnett 1995; Olzak and West 1991; Carroll and Hannan 1995; Hannan 1995; Barron 1995; Strang 1995). The resource mobilization theory (McCarthy and Zald 1987; Tilly 1978, 1984; Olzak 1992) is one of those; it is understood as a partial theory to conceptually depict the phenomenon of social movements. A core argument of this approach, which distinguishes it from other theories of social movements, is that social movements should be regarded as organized. Organizations within the social movement aim at ensuring and increasing the flow of resources to ensure the social movement's maintenance and growth, as well as their own.

McCarthy and Zald (1987: 20) regard social movements as "a set of opinions in a population representing preferences for changing some elements of the social structure or reward distribution, or both, of a society." For them, as for many other authors, social movements are "nothing more than preference structures directed toward social change . . ." (McCarthy and Zald

1987: 20). However, in some important aspects McCarthy and Zald (1987) diverge from traditional theories of social movements. First, according to McCarthy and Zald, a social movement may or may not be based upon the grievances of the presumed beneficiaries. Second, those who provide money, facilities, and even labor may have no commitment to the values that underlie a specific movement. Third, McCarthy and Zald argue that opportunities for social movements are created by regime weaknesses on the one hand, as well as regime support on the other. Furthermore, they point out that social movements are organized. Rather than seeing organization and movement as contrasting phenomena, they emphasize that they are embedded. They focus attention on the fact that social movements, counter-movements, and authorities are organized.

McCarthy and Zald (1987: 20) define a social movement organization as "a complex, or formal, organization that identifies its goals with the preferences of a social movement or a counter-movement and attempts to implement those goals." The targets of social movement organizations are very much like those of economic and other organizations. Social movement organizations try to ensure the flow of resources, such as money, manpower, reputation, or legitimacy. Like economic organizations and other organizations, social movement organizations attempt to ensure their existence and growth. To ensure the flow of resources, it is important for these latter organizations to mobilize supporters, neutralize counter-movements, transform the mass and elite public into sympathizers, and achieve changes in general values and targets. This is why they often emphasize that the realization of the values, targets, and concepts of the movement benefits wider groupings of citizens through notions of a better future or society.

The environment of a social movement organization is populated with other purposeful actors who are deliberately trying to influence, control, or even destroy it (Gamson 1987). The environment of the social movement organization is active, not passive. Thus, a social movement organization does not interact primarily with other such organizations within the same movement, but with organizations who control the decisions they want to influence, or with organizations in the counter-movement, which oppose the changes it is promoting. The strategies and activities of the respective actors with which the social movement organizations interact cannot, however, be fully foreseen by the social movement organizations. Therefore, the result of

the interplay of the strategies and activities of a social movement organization and various other actors cannot be fully anticipated.

It is our intention to utilize this theory of social movements to make the process of institutionalization of quality management concepts and techniques in Germany intelligible to the reader. Concepts such as ISO 9000 standards or TQM are increasingly being adopted by companies all over the world. The adoption of these structural management concepts, however, often seems to be triggered more by the demands of external claimants (customers, governmental organizations) than by concerns of how to increase the efficiency of an organization (Hackman and Wageman 1995; Walgenbach 1998). Thus, we are addressing a phenomenon regarded as being typical in institutional theory (Meyer and Rowan 1977; DiMaggio and Powell 1983).

Data and Methods of the Historical Analysis

In the first part of the study we will analyze the process of the institutionalization of QM in Germany after World War II. The focus, however, is on the period from 1972 to 1997 because in 1972 the *Ausschuß Qualitätssicherung und angewandte Statistik* (AQS, Committee for Quality Control and Applied Statistics) was set up in the *Deutsches Institut für Normung e.V.* (DIN, German Standards Institute). This committee played a decisive role in developing standards for quality systems such as ISO 9000 (see Walgenbach 2000). The development of standards for quality systems marked an important change in the quality-management movement. It represented the crystallization of a development that began with the use of techniques of statistical quality control in the production departments of U.S. companies in the early 1920s and ended with quality systems. These systems came to be seen as a universal management approach to control the work processes of an organization in its entirety.

Furthermore, we analyze the interaction between this committee and German industry and its associations, because the associations were important representatives of the counter-movement to the quality-management movement. Moreover, the activities of the *Deutsche Gesellschaft für Qualität e.V.* (DGQ, German Society for Quality), which is an important organization in the quality-management movement, and the strategies and activities of the European Commission and the European Council are of relevance for an understanding of the institutionalization process of QM.

We contacted a number of important organizations and institutions that influenced the process of the institutionalization of QM in Germany from 1972 onward, such as the *Bundesverband der Deutschen Industrie e.V.* (BDI, National Confederation of the German Industry), the German Standards Institute, the *Deutsche Gesellschaft zur Zertifizierung von Managementsystemen mbH* (DQS, German Society for the Certification of Management Systems), the *Trägergemeinschaft für Akkreditierung GmbH* (TGA, German Association Body for Accreditation), and the *Deutscher Akkreditierungsrat* (DAR, German Council for Accreditation). Most made comprehensive data available upon request. We analyzed the following documents:

- Minutes of meetings of the Committee for Quality Control and Applied Statistics in the German Standards Institute and of the National Confederation of the German Industry, which refer to the development of standards for quality systems
- Correspondence of the Committee for Quality Control and Applied Statistics in the German Standards Institute and the National Confederation of German Industry, which refers to various drafts of standards for quality systems
- Comments of the National Confederation of German Industry, other industrial associations, and a number of companies referring to various drafts of standards for quality systems

Furthermore, we analyzed the 1972 to 1997 editions of the journals *DIN-Mitteilungen*, the organ of the German Standards Institute, and *Qualität und Zuverlässigkeit*, the organ of the German Society for Quality. We considered that these journals are very likely to document the strategies and activities of the social movement organizations, as well as the institutionalization process of QM. We also analyzed publications and (working) papers of the European Commission and the European Council, which can be linked to the increasing spread of quality systems, quality system certification and TQM. In addition, we studied the general literature on quality control, QM, and TQM.

Attempts to Anchor the Concepts and Techniques of Quality Management in Society

In this section we will describe attempts of the quality-management movement in Germany to anchor its concepts and techniques to society.

These attempts can be divided into three streams of activities. These concern, first, the gradual broadening of the field of activities; second, attempts to professionalize the body of technical knowledge of the quality-management movement and activities aimed to establish quality management as an academic discipline; and third, attempts to institutionalize quality management in for-profit organizations. The historical analysis presented in this section is used to deduce hypotheses that are tested in a later section.

The Gradual Broadening of the Field of Activity

The Origins of Quality Management. The trigger for the emergence of the quality-management movement, which has almost been forgotten, was the increasing diffusion of the methods of "scientific management." The methods of controlling the process of production and a definite product quality, as developed by Taylor (1911) and his colleagues, were subject to inevitable fluctuations in performance of people entrusted with the tasks of quality control. Controlling outputs and picking out faulty products, especially when producing large masses of products with a low market value, thus proved to be as awkward as it was expensive. This procedure could never be completely satisfactory from the point of view of efficient quality assurance. The problem could have been solved to a large extent during Taylor's time through the methods of applied or technical statistics, which were already fairly developed (Lerner 1988). However, the application of statistical methods was slow to win recognition in management practice (Tuckman 1995), primarily because the qualifications required to use these methods were nonexistent in most companies (Masing 1978).

In 1931, a book regarded today as a classic in statistical quality control was published. It was Shewhart's *Economic Control of Quality of Manufactured Product*, which discussed suitable sampling plans and methods for their development. The first systematic access to the use of statistical quality control in industrial production was thus created. Subsequently, managers in production departments gradually began to use statistical methods to process large numbers of data (Lerner 1988). However, it was application in U.S. industry by the Statistical Research Group during World War II and the enormous success achieved through the application of statistical methods that led to the establishment of statistical quality control in mass production (Tuckman 1995).

Development in Germany. In Germany it was not until the late 1940s that the methods of applied statistics spread (Daeves and Beckel 1948; Bücken 1949). The reason for the delay was that the qualifications required for their utilization were initially almost nonexistent in German industry. In response to this situation, and promoted by a visit from Deming, "father of the quality-movement" (Mann 1989), considerable activities in German industry were started in the early 1950s (Altenkirch 1972; Stumpf 1972; Kirstein 1989). On October 24, 1952 the *Ausschuß Wirtschaftliche Fertigung* (AWF, Committee for Efficient Production) founded the subcommittee *Technische Statistik* (Technical Statistic). Statistical quality control became a core activity in this subcommittee. The idea was to open up considerable potential for industrial rationalization. In many German cities, task forces were set up to exchange the experiences made in applying the methods of statistical quality control. Booklets summarizing the outcomes of the task forces had begun to be published by 1954. In 1956 the journal *Qualitätskontrolle* (Quality Control) was launched. In 1969, it was renamed *Qualität und Zuverlässigkeit*. In 1956 the subcommittee was also renamed *Deutsche Arbeitsgemeinschaft für statistische Qualitätskontrolle* (ASQ, German Working Group for Statistical Quality Control). The focus of the activities of this working group remained initially narrow. Until well into the 1960s, the interest of quality engineers in Germany was concentrated on statistical methods (Fuhr 1993; Orlemann 1995).

From 1960 onwards, the field of activity was broadened. Topics such as organization, expenses, cost effectiveness, suppliers, customer service, and liability for defective products were issues that gained attention. It seems that the extension of the range of topics addressed by quality engineers was valued positively, as reflected in the circulation of the journal edited by members of the quality-management movement. At the end of the 1960s, circulation was more than four thousand, which is an impressive number for a professional journal. Today it is more than twenty thousand (Masing 1996).

In 1968 the former committee *Technische Statistik* changed its name again to *Deutsche Gesellschaft für Qualität e.V.* (DGQ, German Society for Quality). This organization founded in 1952 by only nine representatives of German industry had 1,200 members by 1972 (Altenkirch 1972) and it has more than 7,600 members today. Since the founding of the German Society for Quality, the development and diffusion of the values, concepts, and techniques proclaimed by the quality-management movement in Germany have

been closely aligned with this organization (Altenkirch 1972; Masing 1978; Pfeifer *et al.* 1991a).

The field of activity of the quality-management movement not only broadened with respect to the topics discussed, but also the concepts and methods of the quality-management movement gradually began to penetrate the entire organization, initially in production and continuing all the way up to top management. Quality control in production had been the focus of quality engineers into the 1970s. After this time, opinion spread among quality engineers that production departments were by no means the only source of defects, but rather that the reliability of products was primarily determined by other factors, namely leadership, administration, research and development, construction, purchase, distribution, customer services, accounting, and training (Altenkirch 1972). Subsequently, the emphasis shifted from quality assurance in production to methods of planning and organizing (Masing 1978). At this time and in the following years, the approach corresponded to the international development of QM, to which the names of Deming (1982), Juran (1990), Feigenbaum (1991), and Crosby (1986) are connected.

From the 1970s onward, the field of activity was also extended in another respect. The documentation of quality-related activities was now regarded as an important responsibility of quality assurance departments (Masing 1978). The core idea was that quality-related activities must be planned, documented, and inspected. This was led by the thought that production should be based on authorized technical documentation and should be documented on the basis of continuous nominal and actual comparisons. The intention was to create a combination of quality planning and quality control, with documentary proof of compliance to the prescribed procedures and quality standards (Kilian 1984; Stumpf 1976). The concept of documented quality assurance systems, or quality systems, had become discernible.

Quality engineers in Germany established the Committee for Quality Control and Applied Statistics in the German Standards Institute in the 1970s. This committee—based on earlier standards for quality systems created by the British and Canadian Standards Institutes—made several attempts to develop industry standards for documenting quality systems. All these attempts were rejected by German industry, which was represented by industry associations and large enterprises and had formed a counter-movement to prevent the initiatives of the quality engineers. The standardization of quality systems was resisted because German industry feared organizational interference, as well as a standardization of management (Walgenbach 2000).

The European Dimension. In the mid-1980s, it became clear that the European Commission intended to change its policy of technical harmonization. Due to massive problems and delays in harmonizing technical characteristics of products in Europe, it planned to use the ISO 9000 standards to hasten the realization of the single European market (Sauer 1987). Technical specifications were no longer to be integrated into the directives of the European Community. Moreover, a system of certifications should be used to ensure that products would be in line with the demands of the directives (Zuckerman 1997). The European Commission, however, pointed out that the changes in its attempt to technically harmonize the European market should not lead to an area-wide product certification, but rather the manufacturers' declaration that the products comply to the demands of a directive should be accepted on par. The declaration of the manufacturer, however, should be supplemented by independent tests of types and specific aspects of the products or by externally approved (certified) quality systems if necessary. As a result of these measures, the European Commission expected a considerable speed-up in the process and schedule of technical harmonization and realization of the single European market.

German industry, which was supported by representatives of the German government, was not able to push through its reservations for the use of ISO 9000 standards at a European level. The reference of the European Commission to ISO 9000 standards seems, from a German point of view, to be a result of the influence of Great Britain, which had focused on quality systems such as BS 5750—a forerunner to the ISO 9000 standards—in its national industrial policy. The reference to quality systems in directives that have to be implemented at a national level by member states of the European Community led to a virtually forced acceptance of the ISO 9000 standards in Germany (Walgenbach 2000).

Furthermore, the European Commission made use of the ISO 9000 standards in its quality promotion policy in those areas not regulated by directives. Several programs were started to promote the use of ISO 9000 standards and certification. Among the measures implemented was the subsidization of the certification of quality systems in small and medium sized companies. The Commission signaled plainly that it regarded the ISO 9000

standards as a means of increasing the competitiveness of European companies (Walgenbach 2000).

Subsequently, the certification of quality systems spread at an accelerating pace. Whereas at the end of 1988, German certifiers had not even issued ten certifications, there were more than seven hundred certified quality systems in Germany by 1992 and more than five thousand by 1995. The number continues to increase. By 2000 more than twenty thousand certifications had been issued.

TQM has recently become popular, as is manifested in the Malcolm Baldrige Award, the European Quality Award, and a number of related national and regional quality awards. TQM seems to be the temporary end of the expansion of the field of activity of the quality-management movement. The adoption and encouragement of TQM by quality engineers in Germany, which has hardly any technical components but is rather a comprehensive management concept, was due primarily to the increasing spread and success of TQM globally.

TQM and the European Quality Award were again promoted by the European Commission (Qualität und Zuverlässigkeit 1992). In using a concept of the quality-management movement for its industrial policy, the Commission once again hoped to increase the competitiveness of Europe's enterprises with a management approach proclaimed by the quality-management movement (European Commission 1995).

The recourse of the European Commission to ISO 9000 and TQM legitimized these concepts. We argue that this legitimacy should be reflected in an increasing number of articles that refer to ISO 9000 or TQM in the organ of the quality-management movement. Thus, we hypothesize:

> Hypothesis 1: The probability that an article in the organ of the quality-management movement, namely the journal Qualität und Zuverlässigkeit, refers to ISO 9000 or TQM increases over time.

The latter expansions of the field of activities in particular implied a distinctive shift in the main focus of the concepts of the quality-management movement. The ISO 9000 standards replaced "quality *assurance*" with "quality *management*" in 1987. The ISO 9000 standards were seen as a management tool that should not only be applied in production departments. From that point on, QM was understood as a *universal* approach that should be used in every department of every company in every industry. The ISO

9000 standards also meant a clear break in another aspect. They signified—at least in Germany—a fundamental expansion of the area of standardization. Besides the technical standardization of product characteristics, the standardization of management systems had now become a field of activity of the German Standards Institute. The re-orientation in industry policy and technical harmonization of the European market induced by the European Commission through its reference to the ISO 9000 standards made the break even more significant. We argue that these concurrent events have had far-reaching effects. One would expect that it should have become increasingly attractive for members of other nonengineering professions to enhance their own legitimacy by referring to the concepts and techniques of the quality-management movement. Consequently, they should have provided resources, such as labor or their reputations, to the quality-management movement. Thus, we hypothesize with respect to changes in the authorship of the journal *Qualität und Zuverlässigkeit*:

> Hypothesis 2a: The proportion of articles in the organ of the quality-management movement written by nonengineers increases over time.

The legitimization of the ISO 9000 standards and TQM by the European Commission should have had the effect that nonengineering professions in particular provided resources to promote these concepts. We assume:

> Hypothesis 2b: The probability that an article is related to ISO 9000 or TQM increases over time more strongly for articles written by nonengineers than for articles written by engineers.

From Training for Practitioners Toward an Academic Discipline

Training Practitioners. Besides the expansion of the field of activity and the changes in the content of the concepts promoted, other activities and strategies were helpful in the institutionalization of QM. It is noticeable that from the beginning, quality engineers tried to build and expand a system of training and instruction simultaneously. As early as 1954, the German Working Group for Statistical Quality Control, later renamed the German Society for Quality, provided elementary training and courses for practitioners (Sattler 1972). The courses found approval. Until 1972 more than 23,000 qualified employees were trained in various courses of instruction and seminars (Altenkirch 1972). From the beginning, attempts to professionalize

the educational system were obvious. The level of the courses gradually increased. Examinations were introduced and certifications issued (Stumpf 1972). The training courses were encouraged by employment offices, which provided grants to participants. The content of the training courses and the certifications issued by the German Working Group for Statistical Quality Control were acknowledged by the state, and thus received an official and legitimized status.

The course offering was soon complemented by a crash course with written and oral examinations. After having attended the course, participants were expected to be able to explain the methods of statistical quality control to their colleagues and bosses. Moreover, it was their responsibility to ensure the spread and utilization of the methods in the companies where they were employed (Stumpf 1972). Many graduates became lecturers of the German Working Group for Statistical Quality Control themselves. They now taught the "unified body of knowledge," which they themselves had acquired in the training courses they attended. The unification and systematization of the body of knowledge of the quality-management movement was an explicit target (Stumpf 1972; Fuhr and Stumpf 1993) and indicates the attempts to institutionalize an approved profession (Hartmann 1972). By the early 1990s, more than 250,000 participants had attended the training courses of the German Society for Quality (Fuhr 1993).

Until the 1970s, the focus of the training courses was on the application of statistical methods of quality control. In the early 1980s, the accent shifted to techniques and processes of organizing. The intent of diversifying the courses was to address management and even top management. Since the publication of the ISO 9000 standards, these standards have served as a basis for management training (Stumpf and Franke 1986; Kampa 1996). From 1985 onwards, the German Society for Quality offered courses on QM (Fuhr and Stumpf 1993). Participants who successfully passed the exams acquired the title "Auditor," and since 1995, the international certification "Quality Systems Manager" (Kampa 1996). Meanwhile, the German Society for Quality has diversified its courses again. Today, seminars and courses covering topics such as "EQA (European Quality Award), from ISO to TQM, How the Utilization of the EQA-Concept Leads to Business Excellence" or "Integrated Management Systems—What Comes After the ISO 9000 Certification?" are offered (DIN-Mitteilungen 1996). Since spring 1996, a course on TQM is also being offered. Participants are trained to become assessors

of the TQM-model, which is based on the criteria of the European Quality Award. Participants should become familiar with the TQM model and methods of performing a self-assessment of their company's management system. As soon as a participant has successfully applied the methods of "self-assessment," a certification "TQM-Assessor" can be issued by the German Society for Quality (Kampa 1996).

"Quality Science." The successful integration into the lectures of technical universities in Germany from the late 1960s onward was beneficial for the accelerating diffusion of the concepts and techniques of QM. Quality assurance gradually came to be seen as a "science." As of 1964, the chairman of the German Working Group for Statistical Quality Control taught an elective class on quality management to graduate students at the Technical University of Berlin; in 1971 he became honorary professor. A year later, lectures on quality management were held at the Technical University of Hannover (Stumpf 1972); in the following years, other universities followed suit. In 1984 the German Society for Quality changed its statutes in order to advance the anchorage of quality assurance in universities: "In § 2 it is now stated: 'The German Society for Quality aims to promote scientific studies in the area of quality assurance'" (Pfeifer 1986: 57).

At the same time, the quality-management movement attempted to mobilize further resources in order to anchor QM in the system of education. The strategies and tactics employed to achieve this aim included descriptions of international competitors as having an increasing competitive advantage, allusion to an actual or potential economic crisis (for a more detailed description of these tactics see Kieser *et al.* 1998), and, as is typical for social movements, emphasis on the enormous potential societal benefit that may be achieved through the realization of the movement's value system and techniques.

This strategy appears to have been successful. In 1988 an important goal was accomplished when QM became an academic discipline. The first chair for "*Qualitätswissenschaft*" (quality science) was established at the Technical University of Berlin (*Qualität und Zuverlässigkeit* 1989; Malorny and Kassebohm 1994). By 1989 there were three chairs at German universities containing the term and a fourth was planned (Pfeifer *et al.* 1991a, 1991b). In the mid-1990s the activities were intensified once more. In December 1994, eight professors established the *Gesellschaft für Qualitätswissenschaft e.V.* (GQW, Society for Quality Science). The objectives of this soci-

ety were to promote *Qualitätswissenschaft* in theory and research, facilitate the transfer of quality-management knowledge to companies, and ease its utilization in industry (*Qualität und Zuverlässigkeit* 1995). This development was and still is supported by the European Commission (European Commission 1995, 1996; Storp *et al.* 1991).

It appears likely that the increasing attempts to professionalize quality-management knowledge, as well as the effects that resulted from the European Commission's programs to promote QM, should have led to increasing support of the quality-management movement by another of society's already established and legitimized subsystems, namely science. We thus hypothesize:

> Hypothesis 3a: The proportion of articles in the organ of the quality-management movement written by academics or with participation of academics increases over time.

The support from the scientific subsystem should become particularly clear in concepts encouraged by the European Commission to harmonize the European market and increase the competitiveness of European enterprises, which thus already appeared to be legitimized concepts:

> Hypothesis 3b: The probability that an article is related to ISO 9000 or TQM increases over time more strongly for articles authored or coauthored by academics than for articles written by nonacademics (practitioners).

Attempts to Institutionalize Quality Management in For-Profit Organizations

A further objective of the quality-management movement was to institutionalize quality-management knowledge in the upper levels of management hierarchy in companies. Behind the increasing efforts to make quality an issue at the top-management level (Müller-Rossow 1972; Franzkowski *et al.* 1984) lies the attempt to establish QM as a self-evident aspect of "modern" companies. This attempt can already be identified in an article published in 1972 by a cofounder of the subcommittee of the Committee for Efficient Production, *Technische Statistik*, from which the German Society for Quality originates (Altenkirch 1972). If the attempt to institutionalize QM as a management approach in organizations was successful, it should be reflected in the authorship of the journal analyzed. The proportion of managers (practitioners) with high formal qualifications and extensive experience who

place resources at the disposal of the quality-management movement should have increased over time. The level of formal qualification can be regarded as a predictor of the rank or future rank in the managerial hierarchy in German companies. The age of the authors can be interpreted as a measure for work experience (Eberwein and Tholen 1990; Wuppermann 1989; Walgenbach 1994). So we assume:

> Hypothesis 4a: The proportion of articles in the organ of the quality-management movement written by authors with high levels of education increases over time.

> Hypothesis 5a: The proportion of articles written by older authors increases over time.

The accelerating diffusion of the ISO 9000 standards was useful for the attempt of the quality-management movement to anchor QM at the highest possible level in corporate hierarchy in order to gain influence in companies because the standards contain clear requirements regarding the tasks and the division of labor in the management of an organization:

> The supplier's management with executive responsibility shall appoint a member of the supplier's own management who, irrespective of other responsibilities, shall have defined authority for ensuring that a quality system is established, implemented, and maintained in accordance with this International Standard . . . [Further,] (t)he supplier's management with executive responsibility shall review the quality system at defined intervals sufficient to ensure its continuing suitability and effectiveness in satisfying the requirements of this International Standards and the supplier's stated quality policy and objectives.

However, exactly who should become management representative remains unspecified in the standards. Hans (1992: 251), auditor of one of the largest German associations for certification states: "It should always be the CEO of the corporation or the head of a business unit." The president of the German Society for the Certification of Management Systems, Hansen (1994), is less demanding. His interpretation of the standards is that the representative of management may be a member of the board, but he does not regard this as a prerequisite.

Nonetheless, the ISO 9000 standard's claim of being an approach for company management is modest. QM is only declared to be *one aspect* of management (Saatweber 1994). QM is understood to be the aspect of man-

agement that defines quality policy and the means for its realization. The claim is much more comprehensive in TQM. Here, QM is not only one aspect of management "but the entire management system per se which encompasses all other activities" (Grabert *et al.* 1993: 269).

It was also attempted to anchor QM at top hierarchical levels by conveying QM as one of or even *the* management concept already being used by companies. Petrick (1995) ascertains that today a (certified) quality system is sometimes seen as being on a par with systems of finance management, cost management, or environmental management; he argues that it is more frequently seen, however, as the core of the entire management system of a company.

If attempts to institutionalize the values of the quality-management movement at higher levels of the managerial hierarchy were successful, then this should be reflected in the authorship of the journal *Qualität und Zuverlässigkeit*. The proportion of more experienced and formally highly qualified managers making resources available to the quality-management movement for the promotion of ISO 9000 and TQM should have increased over time.

> Hypothesis 4b: The probability that an article refers to ISO 9000 or TQM increases over time more strongly for articles by authors with higher levels of formal qualifications than with lower levels of formal qualifications.

> Hypothesis 5b: The probability that an article referring to ISO 9000 or TQM over time increases more strongly for articles by older authors than by young authors.

Data and Methods of the Quantitative Analysis

As we noted in the introduction, we tested our hypotheses by analyzing articles published in the journal *Qualität und Zuverlässigkeit* between 1987 and 1997.[2] We selected this time frame because the publication of ISO 9000 in 1987 led to a shift in the contents of the journal toward a stronger consideration of management aspects.

Within this time frame, we identified 1,515 articles, many of which were written by more than one author. Since in almost every article there was ample information about the author(s) and the subject, we could easily build the necessary variables to test the hypotheses. However, some articles did not provide the necessary information and had to be excluded from the data set. Therefore, the data set was reduced to 1,314 observations.

We divided the eleven years of observation into six time periods, five of which covered two years of publication and the sixth only one year. We measured the content of the articles by registering whether they referred to ISO 9000, TQM, or any other item.

We then identified five sectors from the articles. These were the chemical industry; the service sector, including the software industry; the metal industry; the electrical industry; and articles that were not related to any specific industry. We also measured the occupational fields of the authors. We distinguished among articles written solely by practitioners (nonacademics), articles written solely by academics, and articles written by both practitioners and academics.

Moreover, we distinguished between articles having at least one author with a diploma in engineering and all other articles. Then we measured the authors' education by registering the author's highest formal qualification. We used three categories: articles written by at least one professor,[3] articles written by at least one author who had obtained a Ph.D. (without being a professor at a university or polytechnic), and articles written by authors whose qualification was a university diploma or lower.

Finally, we distinguished among three age categories of authors: articles written by older authors (aged more than fifty-five years), articles written by middle-aged authors (aged thirty-five to fifty-five years) and articles written by young authors (younger than thirty-five years). Where an article was written by more than one author, the age of the oldest author was taken.

We tested Hypotheses 2a, 3a, 4a, 5a by bivariate means in order to study the development of the different attributes of the articles over time. We calculated χ^2 values and contingency coefficients. We tested the other hypotheses (Hypotheses 1, 2b, 3b, 4b, 5b) by multivariate means. We estimated the different effects on the probability of an article being related to ISO 9000 or TQM with binary logit-models (Agresti 1990). These models have the form:

$$P(Y = 1) = \frac{\exp(\beta_0 + x'\beta)}{1 + \exp(\beta_0 + x'\beta)},$$

with P(Y=1) describing in our case the probability that an article is related to ISO 9000 or TQM. The dependent variable of such a model is calculated as

$$\log\left\{\frac{P(Y = 1)}{1 - P(Y = 1)}\right\} = \beta_0 + x'\beta,$$

which describes the natural logarithm of the ratio of the probability that an article is related to ISO 9000 or TQM and its complementary probability. This expression is called logit and is calculated as a linear function of the covariates.

Results

Before we come to the analysis of the change in the contents of the journal (Hypothesis 1), we want to consider the changes in the attributes of the authors over time.

In Hypothesis 2a we stated that the proportion of articles written by nonengineers increases over time. Although this hypothesis is supported, the support is not very impressive. The first column in Table 7.1 shows that there is not a continuous increase in the proportion of articles written by nonengineers. This proportion was at its lowest in 1989 and 1990 at 7 percent. In 1997 15 percent of the articles were written by nonengineers, but the χ^2 value is significant only at the 10 percent level. Hence, the most common profession of the authors remained technical, although differences over time are detectable.

According to Hypothesis 3a, the proportion of articles written by academics or with the participation of academics should increase over time. As we can see in the second column of Table 7.1, this is clearly the case. There is a continuous decline in articles written solely by practitioners. In the first period, almost 90 percent of the articles were authored by practitioners. In 1997 this was the case for only 50 percent of them. The increase of articles written by academics stopped after the fourth period. However, there is a continuously growing tendency for articles to be written jointly by practitioners and academics. In 1997, almost a quarter of all papers were written jointly by authors from both occupational statuses. This can be seen as a successful strategy to gain legitimacy for QM and the quality-management movement. By gaining the coauthorship of academics, practitioners underline the importance of their subject.

Hypothesis 4a stated that the formal qualifications level of the authors should increase over time. The third column in Table 7.1 confirms this assumption. The proportion of articles written by authors whose highest educational qualification was a diploma decreased notably and continuously from 64 percent in the first period to 36 percent in the fifth period. In 1997, there was a very slight increase in articles written by authors with the lowest levels of formal qualifications. However, the percentage of papers written by professors grew from 10 to 33 percent. As a consequence, the three formal qualification levels of authors are almost equally distributed among the articles that were published in the two last periods. Furthermore, the statistics underline the descriptive results. Since time period and education are both on ordinal levels, Somers d with level of formal qualification as a dependent variable could be computed. Like the χ^2 value, the positive value of this coefficient is significant at the 1 percent level. These results are in line with our assumption that the efforts to gain legitimacy of QM by winning the support of people with high levels of formal qualifications should increase over time.

Finally, we will take a look at the development of the age structure of the authors. We stated in Hypothesis 5a that the percentage of articles written by older authors should increase. As can be seen in the fourth column of Table 7.1 this hypothesis is supported. The proportion of articles written by at least one older author (aged over fifty-five years) increases from 16 percent in the first period to 33 percent in the fifth period—with a small reduction in 1997. The proportion of articles written exclusively by young authors remains fairly stable at about 12 percent over the six periods. The percentage of articles written by at least one middle-aged author decreases from over 70 percent to 56 percent in the fifth period. This percentage remains about the same in 1997. This pattern leads to a highly significant χ^2 value and a highly significant Somers d coefficient.

To sum up the results of the bivariate analyses, there are clear indications of increasing professionalization within the quality-management movement. We will refer to these indications in more detail in the discussion at the end of the chapter.

Before we come to the multivariate analysis of the probability that an article is related to ISO 9000 or TQM, we want to take a look at the development of the contents structure of the articles. Overall, 323 articles (25 percent) are concerned with ISO 9000 and 54 (4 percent) are concerned with TQM. The fifth column in Table 7.1 shows that there is an increase in articles dealing with ISO 9000 over the first five periods up to 42 percent. However, in 1997 this decreases to 32 percent. The number of articles concerning TQM is virtually nonexistent at the beginning of the observation and increases to 9 percent in 1997. As a consequence, these results seem to clearly

TABLE 7.1 The Development of the Attributes of Authors and the Contents of Articles over Time

	Engineer	Non-engineer	Practitioners	Academics	Practitioners and Academics
1987–1988 (n=196)	91.3%	8.7%	87.2%	11.2%	1.6%
1989–1990 (n=250)	92.8%	7.2%	79.2%	7.6%	3.2%
1991–1992 (n=244)	91.8%	8.2%	71.3%	24.6%	4.1%
1993–1994 (n=225)	87.6%	12.4%	62.2%	29.8%	8.0%
1995–1996 (n=264)	87.5%	12.5%	56.8%	28.8%	14.4%
1997 (n=135)	85.2%	14.8%	50.4%	25.9%	23.7%
χ^2	9.8			125.8	
DF	5			10	
p	0.08			0.00	
Somers d					
S. d.					
p					

TABLE 7.1 *(continued)*

Diploma or Lower	Ph.D.	Professor	<35 Years	35–55 Years	>55 Years	TQM	ISO 9000	Other Items
64.3%	26.0%	9.7%	13.3%	70.9%	15.8%	0.5%	5.1%	94.4%
54.8%	30.8%	14.4%	12.0%	68.0%	20.0%	0.4%	8.4%	91.2%
44.3%	32.4%	23.3%	13.9%	59.9%	26.2%	2.0%	24.2%	73.8%
40.4%	31.6%	28.0%	10.2%	60.0%	29.8%	5.3%	34.7%	60.0%
35.6%	33.7%	30.7%	11.0%	56.4%	32.6%	8.7%	42.4%	48.9%
37.0%	30.4%	32.6%	12.6%	57.8%	29.6%	8.9%	31.9%	59.2%
	69.0			25.6			196.5	
	10			10			10	
	0.00			0.00			0.00	
	0.16			0.07				
	0.02			0.02				
	0.00			0.00				

support Hypothesis 1. However, this hypothesis will be tested in a more precise manner by the multivariate logit-models.

In the next step, we analyze how the different attributes of the articles influence the probability that an article is related to ISO 9000 or TQM. We estimated three hierarchical binary logit-models in which the relatedness to ISO 9000 or TQM was the dependent variable. Since there are few articles referring to TQM, and TQM is very much connected to ISO 9000, we decided to put these categories together and estimate binary rather than multinomial models. The first two models in Table 7.2 display the main effects of the periods, the attributes of the authors, and the different industries to which the articles were related. The industry dummies were included as control variables.

To test Hypotheses 2b, 3b, 4b, and 5b we included interaction effects between the attributes of the authors and the periods in Model II. Since in the first years of observation there were only a few articles related to ISO 9000 or TQM, interaction effects were only built between the last three periods and the referring attributes of the authors. Our hypotheses suggest that we should find positive effects of the interactions.

The first model in Table 7.2, which measures the influence of the different periods, corresponds with the fifth column in Table 7.1. We took the third period as the reference category because the proportion of ISO or TQM articles in this period reflects the mean percentage of these articles quite well. In the first two periods, the logit of an article being concerned with ISO 9000 is significantly lower than in the third period, with a stronger effect in the first

TABLE 7.2 Binary Logit Models of the Articles' Content

	Model I	Model II	Model III
Constant	−1.034***	−0.767***	−1.852***
Period[a]			
1987–88 (P1)	−1.788***	−1.771***	−1.790***
1989–90 (P2)	−1.304***	−1.248***	−1.295***
1993–94 (P4)	0.629***	0.566***	1.849***
*1995–96 (P5)	1.080***	1.031***	2.598***
1997 (P6)	0.659***	0.627***	2.556***
Industry[b]			
Metalwork		−0.892***	−0.933***
Electrical		−1.042***	−1.024**
Chemical		−0.362	−0.475
Service sector		0.797***	0.700***
Authors' Profession[c]			
Nonengineer		0.105	0.423
Authors' Occupational Fields[d]			
Academics		−0.519**	−0.339
Academics and practitioners		−0.150	−0.208
Authors' Level of Formal Qualification[e]			
Ph.D.		−0.331**	−0.451
Professor		−0.037	−0.177
Authors' Age[f]			
Middle-aged (35–55 years)		0.078	1.252***
Older (>55 years)		0.181	1.523***

TABLE 7.2 *(continued)*

	Interaction Effects		
	Model I	Model II	Model III
Nonengineer*P4			−0.545
Nonengineer*P5			−0.591
Nonengineer*P6			−0.050
Academics*P4			−0.410
Academics*P5			−0.064
Academics*P6			−0.595
Academics and practitioners *P4			0.387
Academics and practitioners *P5			0.384
Academics and practitioners *P6			−0.873
Ph.D.*P4			−0.633
Ph.D.*P5			0.935**
Ph.D.*P6			0.258
Professor*P4			0.087
Professor*P5			0.291
Professor*P6			0.775
Middle-aged*P4			−0.897
Middle-aged*P5			−2.207***
Middle-aged*P6			−2.038***
Older*P4			−1.517*
Older*P5			−2.112***
Older*P6			−2.381***
Log-Likelihood	−682.8	−660.5	−643.5

*$p<0.10$ **$p<0.05$ *** $p<0.01$

Omitted Categories: a: 91 – 92 (P3); b: No specific industry; c: Engineer; d: Practitioner; e: Diploma or lower; f: Young (<35 years)

period. In the fourth and fifth periods the effect is positive and increases. In 1997, the logit drops to the level of the fourth period. This pattern remains quite stable in Model II, where all of the main effects were included.

In Model II, the effects of the different industry sectors show that articles referring to the metal or electric industry have a significantly lower logit of being concerned with ISO 9000 or TQM than articles with no relation to any specific sector, which were taken as the reference category. Articles for the chemical sector also have a lower logit of being related to ISO 9000 or TQM; however, this effect is far from being significant. However, articles for the service sector, including the software industry, display a positive and highly significant effect. This is remarkable, as standards for quality systems had not originally been designed for the service sector and the software industry. However, this effect represents institutionalization as described in institutional theory.

Apart from these main effects the following significant influences of the attributes of the authors are also detectable: the logit of an article referring to ISO 9000 or TQM is significantly lower when it was written by academics than when the authors were practitioners. When articles were written by authors who had at most a Ph.D., the probability of their being concerned with ISO 9000 or TQM is significantly lower than for those articles whose authors had at most a diploma. It is interesting that when at least one author is a professor there is no detected effect.

By looking at the interaction effects in Model III we detect only very slight support for our hypotheses concerning the changing probability of articles being related to ISO 9000 or TQM. Articles written by nonengineers do not display a stronger affinity to ISO 9000 or TQM over time than articles written by engineers. Also there is no stronger consideration of ISO 9000 or TQM over time for articles written by academics compared to articles written by practitioners. For both of these interactions, negative effects, although not significant, could be detected. For articles written both by academics and practitioners, one finds a stronger increase in the tendency to deal with ISO 9000 or TQM in the fourth and fifth period compared with articles written by practitioners. However, these coefficients are not significant. In the sixth period the coefficient turns negative. Thus, Hypotheses 2b and 3b cannot be confirmed.

However, the results suggest at least some support for Hypothesis 4b,

however slight. Compared to articles written by authors who had obtained, at most, a university diploma, articles whose authors had at least a Ph.D. display a significantly stronger increase in the tendency to be related to ISO 9000 or TQM in the fifth period. The interaction effect between the last period and articles written by authors with a Ph.D. is still positive but much lower than that for the fifth period. This interaction effect is not significant. But articles with at least one author who is a professor display a continuously stronger increase in the tendency to be related to ISO 9000 or TQM, although these interaction effects are not significant.

For articles written by older authors, the referring interaction effects are not positive as expected. On the contrary: articles written by older authors have a significantly smaller increasing tendency to refer to ISO 9000 or TQM over time than articles by young authors. For articles by middle-aged authors there is also a significantly smaller increase in the tendency toward ISO 9000 or TQM for the fifth and sixth period. The highly significant and positive main effects of author's age show that in the first six years of observation, articles by older and middle-aged authors are actually more concerned with ISO 9000 or TQM than articles by young authors. However, this pattern changes thereafter.

To provide a closer look at the differences in the development of the probability of an article being related to ISO 9000 or TQM between articles of the different age groups, Figure 7.1 displays these probabilities for articles of young and older authors. A presentation of the period-specific probabilities for articles by middle-aged authors is omitted in order to avoid making the figure too complex. The probabilities were calculated by taking into account the period and age effects and the referring interaction terms, while holding all other influences considered in Model III constant. This means that the period-specific probabilities of articles by young and older authors were calculated for all modal categories (which are also the reference categories) of the remaining covariates.[4] Note that the differences in the probability of an article being related to ISO 9000 or TQM in the first three periods could only be calculated by taking the main effects into account, since interactions were not constructed until the fourth period onward.

One can see that the stronger increase in the tendency toward ISO 9000 or TQM for articles by younger authors leads to a leveling of the referring probabilities for young and older authors in the period 1993–94. In the

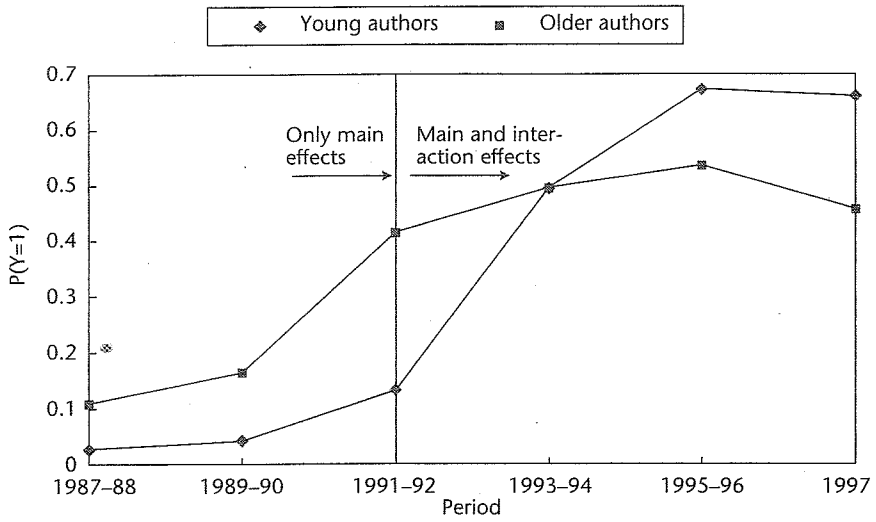

FIGURE 7.1 Development of the probability that an article is related to ISO 9000 or TQM for articles by young and older authors

periods thereafter, articles by young authors display a higher probability of being related to ISO 9000 or TQM. We will discuss this finding in the following section.

Discussion

In this study we have endeavored to unfold the institutionalization of QM by using resource mobilization theory. Our aim was to show that resource mobilization theory is a suitable complementary approach to institutional theory in explaining the emergence of institutions. The process of institutionalization is influenced or at least accompanied by a process of resource mobilization. Thus, the process of institutionalization can be explained by drawing on resource mobilization theory. Institutional demands on organizations are the result of the interaction of the activities of different actors whose strategies and activities are institutionally defined.

In our study, we have depicted the activities and strategies of the movement that aimed to anchor its own system of values and thus its own concepts and instruments within the different subsystems of society, particularly the business and scientific subsystems. Three basic streams of activities could be clearly identified:

- The gradual broadening of the field of activities of the quality-management movement
- The increasing professionalization and attempt to establish the movement's own knowledge within the scientific subsystem
- The attempt to anchor the concepts of the quality-management movement within firms

The process of institutionalization was encouraged by the European Commission, which referred to ISO 9000 and TQM and tried to use these concepts for its own purposes. We assumed that this activity resulted in an increased legitimacy toward the quality-management movement and its values, instruments, and especially the above-mentioned concepts of ISO 9000 and TQM. The historical portrayal of the interplay of the activities of the quality movement, its counter-movement, and the European Commission provided the basis from which several hypotheses about the course of the resource mobilization process were derived.

In the second part of our empirical study we tried to uncover the striving for resources and the process of institutionalization within the quality-management movement by analyzing change in the authorship of the journal *Qualität und Zuverlässigkeit* between 1987 and 1997. Our results show that the movement succeeded in gaining more and more authors who were able to provide important resources for the field of QM. These resources, such as qualifications or experience, provide a high degree of legitimacy. Within the time frame of observation, the proportion of articles written by academics or with the participation of academics increased. Moreover, the proportion of professors and older, that is, more experienced, authors increased. In addition, articles were increasingly written by nonengineers. This indicates that the topic of QM has been recognized outside the profession of quality engineers.

The change in the composition of the journal's authors was then expected to be connected with an especially increased commitment of "new" authors toward the items ISO 9000 and TQM. We believed that this should be the case because authors with high formal qualifications and ample experience should be especially interested in concepts that have already received external legitimacy. We argued that the willingness of these authors to pro-

vide resources should be higher, since these concepts had already been legitimized by the European Commission and the European Council. However, the results of our multivariate models showed that the probability of an article being related to ISO 9000 or TQM only increased more strongly over time, that is, after an initial period of six years when the article was written by authors with a higher level of formal qualifications. Apart from this finding, a stronger commitment toward ISO 9000 or TQM by authors with specific qualifications was not detectable.

For articles by older authors, the increase in the probability of the article being related to ISO 9000 or TQM is distinctly smaller than for articles by young authors. This contradicts the hypothesis that the process of resource mobilization should have led to an especially increased commitment of older and, therefore, more experienced authors toward these concepts. A possible explanation for this unexpected finding is that the concepts of the quality-management movement had already been legitimated to a sufficient degree to attract younger authors to write and submit articles to *Qualität und Zuverlässigkeit*. Another possible explanation is that the responsibilities of QM and the associated tasks of public relations were delegated to younger, less experienced employees in the organization. If this assumption is correct, supported by the fact that the proportion of articles that address ISO 9000 decreased in 1997 after having continuously increased for a whole decade, one has to conclude that the aim of the quality-management movement to establish QM at the upper level of the managerial hierarchy and to mobilize these resources was not achieved.

8 The American Quality Gospel in Britain and Japan, 1950–1970

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Introduction

During and just after World War II, American experts began to develop new ways of controlling product quality. They believed that they had found the secret of making goods that would conform rigorously to specifications and thus allow consumers much greater levels of satisfaction. Unreliability and outright product failure were to be things of the past.

As the Cold War developed, the U.S. government decided that its allies should share in the benefits of this breakthrough and accordingly made great efforts to popularize it in both Europe and Asia. Indeed, the quality gospel became an integral part of the technical assistance programs that were so much a feature of the succeeding years. American missionaries toured widely, explaining what needed to be done, and financial assistance was given to local organizations that wanted to concentrate on the issue.

This chapter looks at what happened when the quality gospel arrived in Britain and Japan. It first examines the American innovations and then outlines how they were received in the two national contexts. The evidence shows that the Japanese were more enthusiastic about U.S. methods than the British, and the second half of the discussion reviews some of the ways in which this contrast might be explained. Broad cultural or economic theories, it seems, cannot account for the whole story. Most emphasis, it is argued, needs to be placed on the particular political configurations of the postwar period—and, in particular, on the way in which U.S. experts and their indige-

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Hierarchical structures of communication in a network organization

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KEYWORDS
(Post-)Bureaucratic organization;
Intranet communication;
Social network analysis;
Information technology

Summary
We analyze the intranet communication behavior of members of a company that was deeply committed to the principles of non-hierarchical communication structures and of post-bureaucratic organization. We observe a split between the symbolic activities for creating a non-hierarchical network organization and the actual intranet communication behavior of the organization members. In their daily communication on the intranet, they persistently reproduced hierarchical structures and official channels—elements typically associated with bureaucratic organizations. Further, we find many signals in the content of the intranet messages, reflecting a social hierarchy that has evolved within the organization. Thus, despite rhetoric to the contrary, our findings regarding this communication behavior show that, to all intents and purposes, this particular organization displayed characteristics similar to those of a traditional bureaucratic organization.

The network organization

The concept of the network organization is presented in the popular management literature as a counter-model to the bureaucratic organization, and one that would increase the flexibility or adaptive capacity of organizations. In order to increase flexibility and adaptability, emphasis is placed in the network organization on the rapid and broad diffusion of information (Probst, Raub, & Romhardt, 2006). Free communication flows and shared access to information and knowledge are regarded as essential (Cairncross, 2001). Thus, contrary to classic theories of organization (March & Simon, 1958; Simon, 1945; Weber, 1968), information should be available to all members of the organization, irrespective of specialization and/or hierarchical position (Koehler, Dupper, Scaff, Reitberger, & Paxson, 1998; Levine, Locke, Searls, & Weinberger, 1999). The network organization is conceived as a group of linked experts (Sproull & Kiesler, 1991). These experts however, are not to be understood as pure specialists. On the contrary, it is argued that there should be an overlap in their respective areas of expertise, in order to promote mutual understanding and a recognition of the need for information and knowledge in order to carry out activities efficiently (Mendelson & Ziegler, 1999).

In the network organization, communication and exchange of information should be supported by modern information

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technologies, i.e., e-mail and document management systems integrated within an intranet. These modern information technologies are said to increase the speed of information exchange and to allow the automatic recording of communication and information without requiring any decision on what information should be formalized and what should not (Cairncross, 2001; Marchand & Davenport, 2000; Nonaka & Takeuchi, 1998). Proponents of the network organization argue—at least implicitly—that, due to recent developments in information technology, many of the effects of specific dimensions of the traditional organization, such as hierarchy and specialization, on communication and information exchange will vanish or, at least, diminish (Malone & Rockart, 1991; see also Ahuja & Carley, 1999).

In the popular literature on the network organization, several further measures are discussed, which are regarded as supportive in the creation of such organizations. Rather than relying on formal legitimacy, as in bureaucratic organizations, the source of power in the network organization should be the team (Baker, 1992; Beyerlein & Johnson, 1994; for a comparison of the bureaucratic and the network organization, see Table 1). Status differences should vanish and dysfunctional effects, induced by formal hierarchies, should be eliminated or, at least, reduced with respect to the rapid diffusion of information and know-how. In network organizations, formal rules should be replaced by a strong organizational culture, i.e., shared norms and values (Gallivan, 2001). One important norm is that of informality (Krackhardt, 1994). Informality is said to increase the adaptive capacity of an organization, since informality reduces the likelihood of peers (i.e., other organizational members) regarding each other simply as colleagues only. Consequently, the likelihood increases that information and relevant knowledge will be passed on, even when a job description does not require it or a superior has instructed that it be so.

Table 1 The bureaucratic and the network organization.

Dimension	Bureaucracy	Network organization
Specialization	High	Low
Configuration	Clearly defined, super- and subordination unambiguous	Undefined, ad hoc, depending on task/ problem
Coordination	Based on (written) formalized rules, orders, along established official channels	Based on organizational culture and self-organization; Problem-solving based on the initiative of employees
Formality	Extensive written rules and records	Only a few written rules, storage of all information on the intranet, information as a free good which is to be used or can be used by all employees

Although it can be argued that the assumptions about—as well as the descriptions of—the network organization may be regarded as a kind of rationalized myth (Meyer & Rowan, 1977), several attempts have been made to realize this organizational form in the real world. In an in-depth case study we analyze a company whose founders were deeply committed to the idea of the network organization and who sincerely tried to realize such an organization. We investigate whether or not a central aspect of non-bureaucratic behaviors, i.e., non-hierarchical communication in the coordination of work activities, was successfully achieved by this organization. The empirical question of our study is, thus, the question of whether the founders' attempt to deinstitutionalize hierarchical forms of communication was successful. More specifically, we ask: Does hierarchical communication vanish when it is de-legitimized?

The case company

In an in-depth case study (Eisenhardt, 1989; Yin, 1981), we observed a start-up company, which we will call KnowledgeFactory, over a 6-year period from its early pre-founding activities to the end of its second year as a registered company. KnowledgeFactory was financed with venture capital and operated in the knowledge-intensive industry of software development and consulting.

Founding conditions

KnowledgeFactory is a particularly good candidate for studying the effects of the adoption of the ideas of a network organization, since the mission of this company was to develop knowledge-management tools in order to help other organizations to operate in a post-bureaucratic and networked way. KnowledgeFactory also applied its own technologies and was extremely committed to the ideas of the network organization. In fact, the founders of KnowledgeFactory were strongly convinced that the network organization was an effective form of organizing knowledge-intensive firms and they explicitly rejected the idea that it might just be yet another management fad or fashion (see Abrahamson, 1996; Kieser, 1997).

The pre-founding activities of the company started in 1996 at a German university, where a group of students met regularly to discuss new management concepts (particularly post-bureaucratic organizational forms), knowledge management, and the importance of information technologies for supporting the new concept of a network organization. These discussions are reflected in the draft papers for the establishment of the organization. In these documents, we identified many explicit references to the popular literature on the post-bureaucratic and the network organization, such as the ''cluetrain manifesto''[2] (Levine et al., 1999) as well as

[2]The cluetrain manifesto captures different principles of electronic collaboration established with the rapid growth of internet-

translations and adaptations of the core ideas of the literature on network organizations (as, for example, Mendelson & Ziegler, 1999). For example, on a slide used to present the core ideas of KnowledgeFactory to external venture capitalists, we found: ''Those company members who need information and know-how should directly, and independently of any formal relationship, communicate with those members who have the relevant information and knowledge!''

In 1998 this group of students acquired their university degrees and founded a non-registered company dedicated to the ideas of these new approaches. They hired student helpers to program software tools which would enable companies and non-profit organizations to apply the principles of a network organization by using an intranet (Rosenfeld & Morville, 2002). This software supported document sharing and diverse interactive hierarchy-free communication tools, such as chat rooms, message boards, collaborative file stores, virtual project rooms, etc. In 1999 their first clients started to use this software. The success of the first software implementations in two public organizations led to the idea of founding a registered company which would develop and offer knowledge-management tools and concepts to larger, more established organizations. In January 2000 two other young businessmen, who already had experience of founding companies, joined this group of former students in order to set up a registered company with them. Subsequently, the newly formed team established KnowledgeFactory.

The ages of the founders ranged from 25 to 35 years, and nearly all of them had university degrees in business administration and/or computer science. The founders of KnowledgeFactory soon managed to build up contacts with larger companies. They acquired venture capital (more than 3,000,000€), which they used to finance the further development of the software tool and to provide a resource base for the rapid growth of the company. The venture capital allowed them to hire a young and highly qualified work force which was able to develop and extend the existing software toolbox and to consult larger companies for establishing the ideas of knowledge management based on intranet technologies. Within a year, the company grew from 6 members in January 2001 to 40 by the end of the year. During this period, KnowledgeFactory was operating at two separate locations.

During this year of rapid growth, KnowledgeFactory launched several diverse software-development projects for various business clients. The product of KnowledgeFactory was adapted and developed further, according to the requirements of its clients. Product development required intense communication and coordination between members of the software development team, the consultants of KnowledgeFactory and the clients. A further challenge regarding the coordination of activities during the first months of business activities arose from the fact that KnowledgeFactory's clients were small and medium-sized organizations while KnowledgeFactory itself, despite its rapid growth, was still a relatively small organization. Both these circumstances, plus the fact that KnowledgeFactory was operating at two locations, reduced the opportunities for specializing activities. Each project took months to develop customized solutions on the basis of the existing software platform. However, the time spent on a project and the intensity of the teamwork involved varied, depending on the phase of the software-development project and the speed with which client organizations delivered the information needed for the specification of the software. To cope with this challenge and with a variety of software-development projects all differing as regards the time pressure and the inputs required of the team members, all employees participated in several projects at once. KnowledgeFactory used its own intranet software and its knowledge-management concept internally to manage the fast growth and diverse needs of several simultaneous projects. The intranet was used for coordinating projects, scheduling appointments and meetings, storing plans and other material, and for publishing and documenting project descriptions and deadlines. The intranet could be edited by any member in a way similar to a current Web 2.0 application, and an internal messaging system was included to facilitate internal discussions between members of the organization. The intranet messaging system was used for internal communication and coordination—rather than a typical e-mail system—because it made possible to connect intranet content with discussions, and shielded internal communication from external communications.

(*footnote continued*)
based communication media such as e-mail, World Wide Web, discussion groups, etc.

De-legitimizing hierarchical structures of communication

The founders of KnowledgeFactory took various steps to de-legitimize hierarchical communication structures and to adopt the principles of the network organization. On the one hand they sought to create a context in which the signals and symbols of bureaucratic organizations were as far as possible suppressed. On the other, they explicitly de-legitimized hierarchical forms of communication. Overall, their measures represented a combination of attempts to problematize bureaucratic structures and of offering alternatives to, and substitutes for, a bureaucratic organization:

(1) The basic values and principles of KnowledgeFactory neatly corresponded to the concept of the network organization. These values were reflected in the philosophy, the policy and the symbols of the company. For example, KnowledgeFactory's logo represented a network with nodes and relationships between these nodes. Beneath the company's name was the slogan ''Connecting Knowledge''—the slogan used to introduce the company to potential new employees or customers. The idea was to visualize the importance of linking different people's knowledge via a messaging system on the intranet and of connecting everyone with the information available on the intranet. The ''Connecting Knowledge'' slogan imbued the whole KnowledgeFactory intranet. All the employees had access to all the intranet information from all the computers everywhere in the company location (this policy was dubbed ''everybody gets everything''). To demonstrate the

importance of the intranet, new members received an intranet account immediately after signing their contracts—that is to say, before they had even started working for the company.

(2) Differences in status were minimized. Everybody was given the same amount of office space; all computers were the same age and the same size; office material was identical; the company library could be used by everybody; and everybody had access to every room in the company.

(3) Associated with the idea of reducing status differences was the attempt to avoid specialization. In order to be—and to remain—flexible, every member of the organization was expected to be able to understand the basics of all tasks, i.e., software development and consulting, and to be able to perform them.

(4) Hierarchical structures were avoided. Subordination existed, but only in the sense that every employee was assigned to a *mentor*, whose *only* task was to guide new employees in getting acquainted with the culture of the company. The mentors had no supervisory or other authority. Further, mentorship was not based on functional or technical considerations. It was clearly explained to all employees that the mentor has no functional or technical responsibility. Instead, employees were explicitly asked to use the intranet and to feel free to contact anybody who s/he believed should be involved in a project, who might have relevant information or who ought to be informed about the activities or results of a project. The mentor relationships were the only formally defined organizational relationships among the members of KnowledgeFactory.

(5) Formalization of the organizational structure was avoided as far as possible. For example, KnowledgeFactory did not have an organizational chart, and there were no job descriptions. It should be noted, however, that every employee had his or her own homepage on the intranet, where their particular projects were listed. But it should also be mentioned that, despite the culture of informality sought by the founders of the company, social structures did in fact exist. All members knew who was an owner of the company and it was obvious—at least on the intranet—that some people were working on more projects than others, and that some people were mentors while others were mentorees.

(6) Members were empowered by KnowledgeFactory's information technology in order to create a shared store of all internal information. Further, they were explicitly encouraged to make extensive use of the messaging system, to decide whom to contact and to feel free as to when and how they did so, or what kind of document they wanted to use on the company's intranet.

(7) ''Informality'' was another crucial value. KnowledgeFactory explicitly refrained from adopting the usual way in which people in Germany approach one another in work situations. Everybody was addressed as ''*Du*'' (the informal version of ''you'') regardless of their age or the kind of relationship involved, rather than ''*Sie*'' (the formal version), in order to cultivate a team orientation and a culture of informality. This culture of informality was further emphasized by social activities. Typically, all members of the company, regardless of whether they belonged to the founder group or to the employees, mingled at lunchtime. After work, employees often met to go to the theater or to a bar or a restaurant.

Theoretical reflections

The network organization in general, and our case company in particular, is a remarkable phenomenon because many characteristics of this new type of organization contradict the structuring principles of traditional formal bureaucratic organizations (see Cyert & March, 1963; March & Simon, 1958; Simon, 1945; Weber, 1968), which are based on formally defined roles and relationships between their members. According to Weber (1946), bureaucracy is one of the hardest structures to destroy, and the idea of eliminating formal bureaucratic organization or even only aspects of this kind of organization is becoming increasingly utopian (Walton, 2005). Zucker (1977, 1983) convincingly demonstrated that organization, and typical characteristics of formal organization such as defined positions and relationships between its members, have become cognitive institutions. Such institutions are taken for granted and they determine the behavior of individuals even in those contexts where only weak signals are being emitted to indicate that it is an organizational context with hierarchical relationships.

Thus, while the founders of KnowledgeFactory sincerely attempted to realize a network organization, the structuring principles and values applied in this company collided—at least to a certain extent—with the generally accepted cultural–cognitive beliefs about formal organization in Germany and, probably, in most western societies. KnowledgeFactory, its culture and structuring principles, can thus be interpreted as an attempt to overcome cultural–cognitive institutionalized behaviors.

In traditional bureaucratic organizations, communication based on formally defined relationships between the members is one of the most institutionalized modes of behavior. For instance, if A is the superior of B, B is expected to pass on to A all information which is specified as relevant to and important for A's area of responsibility. Overall, in any bureaucratic organization, we would expect, *ceteris paribus*, B to communicate more often with A than with other members of the organization (Hales, 1986). Thus, KnowledgeFactory had to overcome behaviors which, for example, are taught and trained in many organizations that are based on and committed to traditional forms of organizing, such as schools, military organizations and—probably most of all—other companies.

In a network organization, such as KnowledgeFactory, communication relationships are not expected to be random. However, the communication structure should not be affected by any formally defined relationship between organizational members to the same extent as in bureaucratic organizations. Nonetheless, even though the network organization was a widely discussed organizational form and regarded as highly successful in the 1990s (Gillies & Cailliau, 2000; Levine et al., 1999; Malone & Laubacher, 1998;

Weinberger, 2002), those who were willing to realize this new organizational form had to overcome the widespread and institutionalized form of organizing (Zucker, 1983).

On the basis of our theoretical considerations we thus expected the tensions between the general cultural–cognitive beliefs of organization, which may to a certain extent also be shaped by national cultures and institutions (Delmestri & Walgenbach, 2005; Lane, 1992; Stewart, Kieser, Barsoux, Ganter, & Walgenbach, 1994; Whitley, 1999), and the normative structuring principles favored by the founders of KnowledgeFactory to be reflected in the communication between the members of this organization, i.e., we expected, for example, the mentors to have more central positions in the communication network. Further, we expected to find hierarchical communication structures and hierarchical signals in the communication device so central to KnowledgeFactory, i.e., in the messages sent via the messaging system.

Our expectations were based on the following considerations. (1) Despite the attempts of the founders to establish a network organization, KnowledgeFactory was still an organization, i.e., an institutionalized context which is thought of to be linked to specific behavioral expectations (Zucker, 1977). In fact, KnowledgeFactory was a registered company, and thus reflected many characteristics of a formal organization, such as a company name, organizational roles defined by law, i.e., owners and employees, formal contracts, etc. (2) The founders used their legally defined right to define formal internal roles and relationships, such as mentors and mentorees. By defining a social relationship such as "mentorship", the founders give meaning to this relationship and to the actions which are performed within it. If member A is called the "mentor" of member B, a message sent from A to B is a "top-down" message, whereas a message from B to A is a "bottom-up" message. In line with the literature on organization, we expect formally defined relationships to affect communication structures and communication behavior (Cyert & March, 1963; March & Simon, 1958; Weber, 1968).

To summarize our core argument and our main concern regarding the viability of non-hierarchical communication in a network organization, we could say that communication structures and behaviors in work contexts are less the result of the will of individuals, i.e., in our case company the founders and employees of the organization, but are shaped more by institutionalized conceptions of organization. Or, to put it differently and in a more general manner: the authority to organize is more likely to be found in cultural or institutionalized belief-systems than at the level of the management of single organizations or the level of individuals (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Powell & DiMaggio, 1991; Scott, 2001). The empirical question of our study is, thus, whether hierarchical structures of communication and hierarchical forms of communication behavior were being reproduced by the members of KnowledgeFactory or whether the founder's attempt to deinstitutionalize these behaviors had been successful.

Methods

On the basis of data on intranet communication in October 2001, we investigated whether the structures and the contents of communication on the intranet of KnowledgeFactory were non-hierarchical. In order to analyze the communication behavior on the intranet, we registered all electronic messages sent on the intranet of KnowledgeFactory. Subsequently, we analyzed in a first step whether the communication pattern we identified represents a random distribution of communication acts or whether the communication structure is task-related, i.e., the communication pattern reflects the composition of project teams, or whether it is based on friendship-ties. However, none of these factors explain the communication structure within the intranet of KnowledgeFactory (detailed analysis is available on request). Therefore, we returned to our initial theoretical reflections, which we outlined in the previous section. Contrary to the core ideas of a network organization, we assumed that formal relationships, as defined in the mentorship network, would affect communication behavior. In our study, we thus distinguish between two analytical categories: (1) communication behavior and (2) formal relationships as defined by the mentorship network. Using the data on intranet communication and the mentorship network, we apply social network analysis in order to analyze and to compare the communication behavior on the intranet communication and the mentorship network (Flap, Bulder, & Volker, 1998; Krackhardt & Brass, 1994; Raider & Krackhardt, 2002). Further, we enquire whether the messages sent contain cues that signal hierarchical differences between the communication partners.

Analysis of communication behavior

The social behavior we observed on the company's intranet consists of 1387 electronic messages between members of the organization sent in October 2001. In line with Rogers and Agarwala-Rogers (1976) who conceive organizational communication as a system of interactions between organizational members, we interpret each message as a communication act within a communication channel between a source node and a receiver node (Shannon & Weaver, 1963). A communication channel is modeled as a directed link between sending node and receiving node. The value of a link represents the number of communication acts which are performed following this direction within a certain time period (i.e., 1 month). The set of organizational members (nodes) together with the set of directed communication channels form the communication network (Rogers & Agarwala-Rogers, 1976). This network can be interpreted as a map of the routes that information may follow, when organizational members use existing communication channels on the company's intranet.

The characteristics of this network can be analyzed by applying basic techniques of social network analysis: (1) the number of initiated communication channels per member is the number of outgoing links (referred to as the "outdegree") in the communication network. (2) The number of incoming communication channels per member is referred to as the "indegree". (3) The number of incoming and outgoing channels (the "alldegree") measures the number of communication partners and is thus a proxy for the local relevance of an organizational member. (4) Another proxy for the relevance of a single node is the 2-output influence

domain, which counts the number of organizational members who can be reached by transmitting information through intranet communication in one or two steps. (5) The network can be partitioned concerning the level of local connectedness within a group of nodes. The core level of a node is the number of links that this node shares with other nodes of a set of nodes with the same or a higher core level (De Nooy, Mrvar, & Batagelj, 2005). (6) General measures to describe positions of nodes within the network are closeness centrality and betweenness centrality. The closeness centrality measure is used to calculate the average distance between one node and all other nodes. The betweenness centrality of a node is a measure reflecting the number of shortest paths which cross that node (De Nooy et al., 2005; Freeman, 1979; Freeman, Roeder, & Mulholland, 1980). Both measures are indicators of the importance of an organizational member in the network of communication on the intranet.

Analysis of social structure

Information on mentor relationships, the only formally defined relationship between the members of the organization, is taken from project lists and is based on interviews with members of the organization. We interpret each relationship between a mentor and a mentoree as a formal relationship, in which a mentoree is assigned to a mentor, i.e., the relationship basically reflects a form of formal subordination of a mentoree. We model this relationship as a directed link. The set of organizational members, together with these directed links, forms the hierarchy of mentors of this organization. By application of simple measurements of social network analysis, this network can be analyzed in the same way as an organizational chart: (1) the number of outgoing links (''outdegree'') is roughly comparable with the span of control of an organizational member (see Klatzky, 1970; Woodward, 1965). (2) The number of incoming links (called the ''indegree'') within the mentorship network represents the number of mentors of an organizational member and is thus roughly comparable with the number of supervisors that the member has. (3) The 2-influence domain measures the number of organizational members reached within one or two steps when ignoring the direction of links. (4) The length of the shortest path between CEO and an organizational member in the mentorship network represents the hierarchical level of the position of an organizational member in the mentorship network. Thus, this measure is roughly comparable with the vertical span of control as used in contingency theory (see, for example, Pugh, Hickson, Hinings, & Truner, 1968).

Comparison of communication behavior and network relationships

A social relationship called ''mentorship'' assigns meaning to the social action which is performed within this relationship. Therefore, if member A is designated as a ''mentor'' of member B, a message sent from A to B is a ''top-down'' message. The social relationships become a blueprint for interpreting the observed communication behavior. This blueprint can be used by A and B, by other organizational members and even by external observers in order to interpret the observed behavior. But is knowledge about social relationships a good proxy for communication behavior? In a bureaucratic organization, we expect to find a large amount of communication following formal relationships of super- and subordination (see, for example, Stewart, 1967). In a setting of de-legitimated hierarchical structures of communication, we might expect a deviance from such a communication structure.

In order to compare the two networks, we adopt the following methods: (1) a comparison of the 2-output influence domain in the communication network and 2-influence domain in the mentorship network in order to analyze whether organizational members reach the same number of peers within a distance of one or two steps. (2) An analysis of communication acts over a specific formal distance: within the mentorship network, all members are connected by paths of undirected links. We designate the length of the minimal path between two members the ''formal distance'' between two members A and B. Thus, every communication link between A and B can be classified according to the formal distance into classes, 1, ..., N, where N is the maximum shortest path within the formal network. Subsequently, we are able to identify for each formal distance the number of sent messages that bridge the distance concerned. (3) An analysis of communication acts classified by direction: using the formal hierarchy of mentors as an interpretative device for understanding the communication network, we classify each link in one of four classes of communication acts: top-down, bottom-up, between mentors and between non-mentors. The numbers of the messages sent in each class of communication acts are counted and compared.

Analysis of the content of the messages

We analyzed the content of all messages sent on the intranet in October 2001. First, we made all messages anonymous, i.e., names which allowed the identification of individuals or other organizations were replaced by neutral terms, such as ''first name_1'' or ''surname_2'' or ''company_3''. Thus it is important to emphasize that in the subsequent analyses we were not able to identify the position of the sender or the receiver in the hierarchy of mentors. Second, on the basis of a random sample of 100 messages sent in September 2001, we developed a classification scheme for coding the messages sent. The classification scheme entails different aspects or kinds of communication, such as technical/task-related questions or requests, technical/task-related information or decision/communication of a decision (for details, see Table 3). Since a message may contain several elements or kinds of communication, we coded all the elements or kinds of communication that a message contained. Third, both authors of the present paper independently classified according to the same scheme another random sample of 100 messages from September 2001, in order to check inter-rater reliability. Inter-rater reliability was quite high (more than 95% of the messages analyzed were coded in the same way). The authors then discussed the messages that had been classified differently, but found only minor deviations in the interpretation of a message. For example, in one case

one of the authors had coded a message as a request for a permission to undertake a particular action (''*Anfrage, eine Handlung zu bewilligen*''), whereas the other had coded the same message as a request for approval of an action already completed (''*Anfrage, eine Handlung zu genehmigen*''). The meaning of the two terms is roughly the same—in German as well as in English. Subsequently, we subsumed both categories under ''request for an action to be allowed''. The final classification of the messages sent in October, however, was based on the assignment of one of the authors only.

Findings

In presenting our findings, we will proceed as follows: the first step involves a preliminary visualization of the network of communication in the organization at the peer-to-peer level. Within this network we will then analyze measures of centrality. The next step will be the analysis of the mentorship network. The communication network will then be compared with the assignments of mentorees to mentors in the mentor network. We will analyze the number of communication acts referring to measures of formal distance in the mentorship network. Finally, we will present the results of the analysis of the message content.

Networked communication

Figure 1 illustrates the communication network in October 2001. The graph indicates 56 intranet users at KnowledgeFactory as nodes in a circle and the 346 communication relationships between them. It covers all the 40 employees, plus some former employees and several other people affiliated to KnowledgeFactory. The relationships are directed links from the sender to the receiver of a message.

The number of *weak components* in the graph is one. This component includes all 56 users of the messaging system on the intranet. This means that, if the direction of the links is ignored, all nodes are connected to the other nodes by at least one link and that paths exist connecting each node to all other nodes. There is thus a communication network that connects all organizational members. Within this weak component, a smaller *strong component* occurs with more than two nodes. This strong component entails 47 nodes, representing individuals connected to each other by paths of directed links.

The analysis of the components thus reveals that organizational members are connected with one another by communication links on the intranet. The intranet thus seems, as is claimed in the literature, to offer a device for facilitating intra-organizational communication and, thus, for connecting organizational members with each other. Moreover, this first simple graph appears to reflect KnowledgeFactory's logo slogan ''Connecting Knowledge''.

Centrality

Our visualization of the centrality of nodes (see Figure 2) in the communication network is based on the Fruchterman–Reingold algorithm (De Nooy et al., 2005). The Fruchterman–Reingold algorithm interprets each link as a force between two nodes (Batagelj & Mrvar, 2003). All forces within a network pull nodes in different directions. The Fruchterman–Reingold algorithm starts with a random positioning of nodes. In an iterative process the algorithm computes node positions in which these different forces are balanced for each individual node. Nodes which have many links to other nodes, which themselves also have many links, come to rest in the middle of the graph. Nodes which are only sparsely linked to other nodes are positioned on the periphery of the graph, close to the nodes to which they are

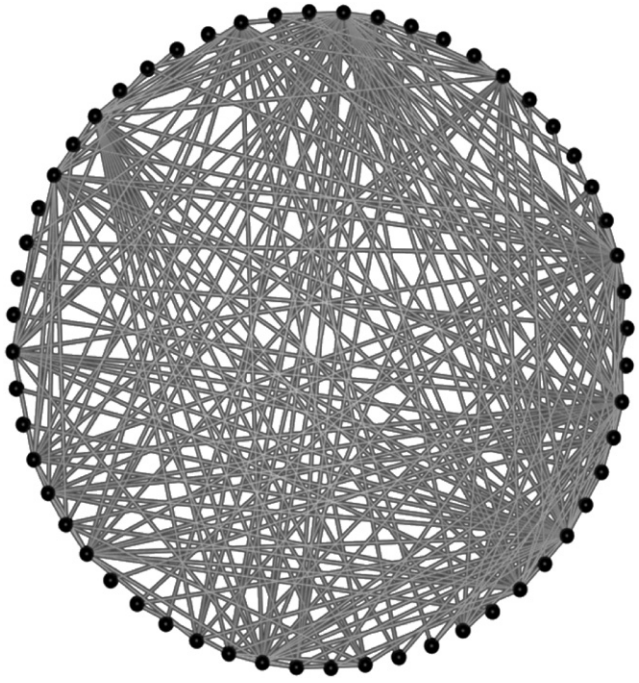

Figure 1 Communication network.

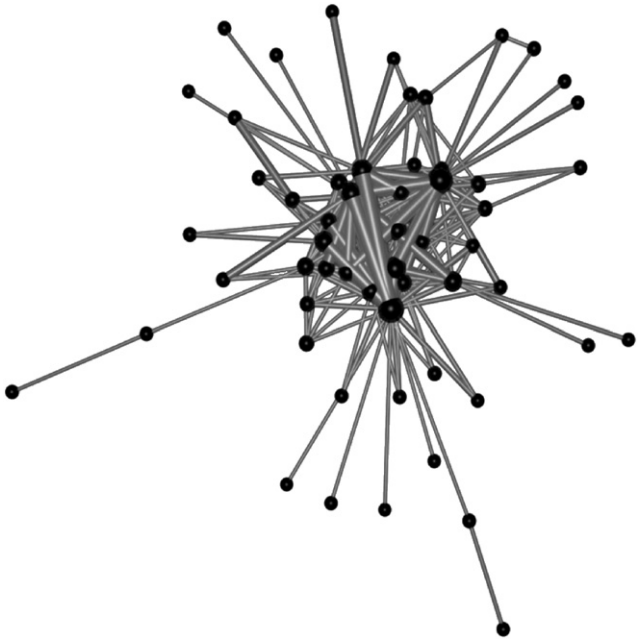

Figure 2 Communication core.

linked. The random positioning of nodes at the beginning of the Fruchterman–Reingold algorithm, may lead to different visualizations of the same network. The position of nodes may vary on all axes. What is relatively constant in all visualizations, however, is the centrality of certain nodes within a network.

In Figure 2, a center–periphery structure becomes visible, as has also been observed in verbal communication networks (Nelson, 2001). Some nodes are connected with many other nodes while other nodes are connected by only one communication channel to another node. Further, these nodes are located close to other well-connected nodes.

This finding, reflected in the Fruchterman–Reingold visualization of the graph, is supported by a correlation analysis (see Table 2). (1) The outdegree is highly correlated with the indegree. This means that organizational members who contact many other members are—themselves—also contacted by many others. (2) Thus, the alldegree, which is computed by adding the incoming and the outgoing degree, is a good proxy for the indegree as well as the outdegree. (3) The closeness centrality and the betweenness centrality measures correlate with the alldegree. This means that an organizational member who has many links is important within the overall communication network of the organization, since s/he can reach all other members within a few steps only and also serves as a transmitter of information between other members. Thus, this member has a central position with respect to the diffusion of information on the intranet.

Core

Central actors are well connected to other central actors. In a more detailed analysis of the communication network, this impression is supported by a quantitative analysis. In a first step we computed core level, betweenness centrality and closeness centrality for each node. A correlation analysis of betweenness centrality measures and core level measures ($R = 0.553$), as well as closeness centrality measures and core level measures ($R = 0.910$), supports our observation ($p < 0.01$ for all correlations, two-tailed test): organizational members who have many links to other organizational members are important for the transmission of information and are connected with other members who also have many links. These members could be regarded as being core members within the communication network on the intranet. Figure 3 shows the members with the highest core level at the top. All other members of the organization have a lower degree of intranet communication and lower centrality levels and are less connected on the intranet to other members of the organization. They are located on the "periphery".

In the next step of our analysis we partition the communication network into core and periphery, and eliminate all links between these two partitions in order to see who the members on the periphery of the communication network are connected with. Figure 4 shows the resulting graph, highlighting the links between core members and the links between members on the periphery of the communication network.

While the communication links within the core produce a dense component, the communication links on the periphery of the communication network are sparse. Further, partitioning the network into core and periphery produces many isolates on the periphery. These isolates represent organizational members who are only integrated into the overall communication network through their links to core members.

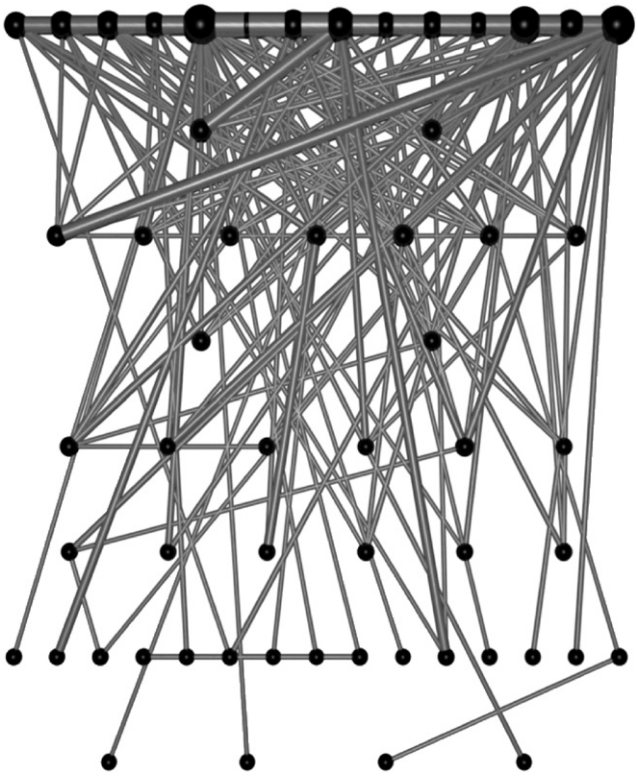

Figure 3 Communication core level.

Table 2 Correlation analysis (Pearson, $N = 56$).

	Indegree	Outdegree	Alldegree	Closeness centrality
Outdegree	0.952**			
Alldegree	0.988**	0.988**		
Closeness centrality	0.916**	0.923**	0.931**	
Betweenness centrality	0.883**	0.862**	0.883**	0.745**

**$p < 0.01$ using a two-tailed test.

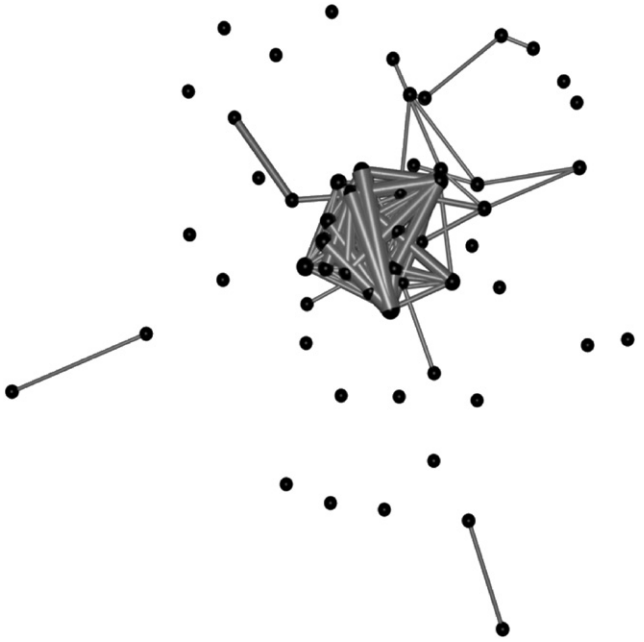

Figure 4 Communication within core and periphery.

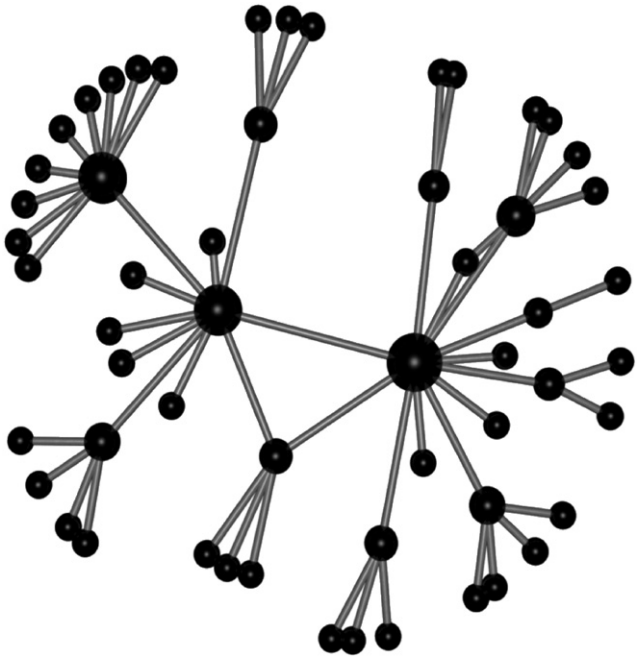

Figure 5 Formal structure based on mentor relationships.

What becomes clear is that the individual communication behaviors of the organizational members differ fundamentally. Some members have many partners with whom they communicate on the intranet, while other members have only one or two communication partners. However, not only does the number of partners differ, but also the selection of partners. Organizational members with many communication partners are connected to other members who also have a large number of communication partners. These members represent the core within the communication network.

Mentorship network

Before comparing the mentorship network and the communication network, we will discuss the mentorship network from a graph theory perspective. We reconstruct the mentorship network of the company and visualize it by using Pajek (software-program for network analysis) (see Figure 5). The visualization entails the formal relationships based on the assignments in the mentorship network.

The mentorship network is sparse (density [loops allowed] = 0.0181760) in comparison to the communication network (density [loops allowed] = 0.1087372). The indegree of most nodes is one. This means that the structure of the mentorship network of KnowledgeFactory is basically comparable to a 1-line authority structure, in which one organizational member has one supervisor. Only minor deviations exist, where two organizational members have two mentors and one member—the CEO—has no mentor at all. The outdegree of the nodes ranges between 1 and 12. The greatest distance between the CEO and any other member is 3, which matches the number of hierarchical levels in the mentorship network. The mentorship network is one weak component, which means that any organizational member can reach any other member if the direction of links is ignored.

From a graph theory perspective (Diestel, 2000) and an algorithmic perspective (Golumbic, 2004; Turau, 1996), a connected graph which *spans* another graph with a minimal number of links to connect all nodes is called a "tree". A simple construction of a tree is made by adding just one link for each new node and by balancing the number of outdegrees of existing links. The reason for the observed sparseness is a result of general construction principles for producing trees. From this perspective, the construction effort required to build a mentorship hierarchy by a 1-line authority structure is minimal. Compared to a tree, any other connected network needs more construction effort per node.

As a result of the construction algorithm, the root of the tree has maximum closeness centrality, maximum betweenness centrality and maximum influence domain. Put differently, everybody has to take more steps to reach all other members. No other person is involved in more formal paths than the person at the root of the tree, and no one other person is able to reach all other organizational members by following directed vertical relationships of subordination within the tree.

When a tree within the mentorship network is interpreted from a sociological point of view, the superior node (root) is, in our example, the CEO. Consequently, the influence domain of the CEO is maximal, due to the construction of the mentorship network, and the influence domain of other organizational members is always lower than the influence domain of the CEO. The influence domain of a subordinate member in the mentorship network depends on his/her span of control and his/her subordinates' span of control on all lower levels in the hierarchy of mentors.

In a further analysis (not presented here), we sought to identify the factors that determine (1) whether or not a member of the organization becomes a mentor, and (2) the position of a mentor within the hierarchy of mentors,

i.e., the overall number of mentorees and the number of mentorees directly subordinated to the mentor concerned (Oberg & Walgenbach, 2007). We found that the number of individuals who were directly mentored, and the overall number of mentorees (in the hierarchy of mentors) that each mentor is responsible for depends on two factors: ownership and the level of formal qualification. Length of membership in the organization, which can be regarded as an indicator of the extent of an individual's organizational experience, and the academic discipline to which the organizational members belong had no significant effect (detailed analysis is available on request). Thus, by assigning mentorship roles, the members of KnowledgeFactory were applying the criteria that are typically used in the creation of formal hierarchies in organizations—at least in Germany (Eberwein & Tholen, 1990; Stewart et al., 1994).

Mentorship network and communication network

We will now compare the empirically observed communication network and the empirically observed network of mentor relationships existing in October 2001, in order to explore the relationship between the two. The analysis proceeds in two steps. First, we compute the 2-output influence domain of each organizational member in the communication network. We then compare the communication influence domain with the 2-influence domain of each member in the mentorship network. Both measures correlate ($R = 0.441$, $p < 0.01$, two-tailed test). However, the output influence measures within the communication network are much higher than those in the mentorship network, since the former is much more widely connected than the latter.

The correlation between the influence domain in the communication network and the formal relationships indicates that organizational members at higher hierarchical levels in the mentorship network reach more organizational members within the intranet than do organizational members at lower levels of this network. Thus, we conclude that the hierarchy of mentors does affect the communication influence domain of organization members (see Figure 6). Secondly, we explore the relationship between core membership and the hierarchical level of organizational members in the mentorship network. Hierarchical level in the mentorship network (1: CEO) and core level correlate ($R = -0.482$, $p < 0.01$, two-tailed test).

In Figure 6 the distances between the first level and the second level are quite large. The distance between each subsequent level declines rapidly. We can thus conclude that the higher the position of an organizational member in the mentor network of the case company, the more likely it is that this individual is a member of the communication core.

Official channels

Further, we analyze the relationship of formal distance between two organizational members in the mentorship network and the number of direct communication acts of these members within the intranet. The formal distance is the length of the information channel between two organizational members, which is measured by counting

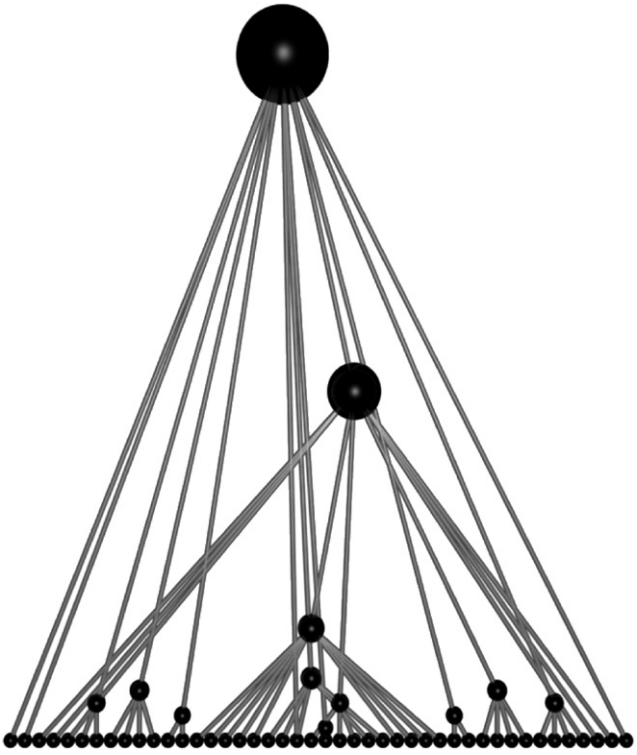

Figure 6 Influence domain within the mentor relationships.

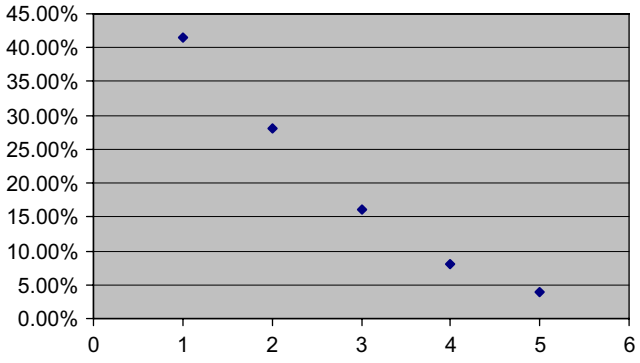

Figure 7 Percentage of communication acts spanning steps in the mentorship network.

the minimum number of formal links which have to be passed to connect the members concerned. The mentorship network provides channels for sending messages, that are roughly the equivalent of "official channels" or "chains of command", and that are based on the formal relationships within the hierarchy of mentors (Yates, 1989). Figure 7 shows the number of communication acts within each class.

As the formal distance within the mentorship network increases, the number of communication acts rapidly declines (see also Krackhardt, 1994). With one step of formal distance, the number of established communication acts is reduced by half. Thus, although the intranet provides a direct link between organizational members independently of formal relationships, most communication acts occur within the immediate area defined by the formal structure of the mentor relationships.

Further, by classifying the communication acts in terms of mentor-to-mentor, non-mentor-to-non-mentor, non-mentor-to-mentor (bottom-up) and mentor-to-non-mentor (top-down) communication in October 2001, we get the following results (see Figure 8).

Theoretically, there are many potential relationships between non-mentors but only a few between mentors. In fact, there are more communication channels between non-mentors (80 channels) and via non-mentor–mentor relationships (198 channels) than across mentor–mentor relationships (68 channels). At first glance, this could be interpreted as support for the idea of a network organization in which everybody communicates intensively with everybody else. However, by calculating the average number of messages sent per type of channel within each class of communication acts, we get a clearer picture of the communication structure within the case company. There is a lot of communication between mentors (7.9 messages per channel on average), but only sporadic communication between non-mentors (2.2 messages per channel on average). The hierarchical structure of the mentorship network is thus a good proxy of communication activities within the observed company.

Content of messages

Finally, we classify the content of all messages sent in October 2001 (see Table 3). The content of the messages is largely technical or task-related. For example, we find task-related information exchange, technical feedback, requests for information and task-related questions. Analysis of the contents of the messages also demonstrates that in KnowledgeFactory the messaging system is used for the coordination of activities. Contents including elements of communication, such as jokes or private talk to ease the path of social relationships, are also identifiable, but are relatively insignificant overall. Most of the messages are thus essentially technical in nature, i.e., they serve to keep the business going. However, we also identify several elements of communication in the messages, which indicate that hierarchical relationships do exist and are visible on the intranet. The members of KnowledgeFactory employ several hierarchical devices in their intranet communications. For example, they issue direct commands, they give direct instructions politely, they provide positive or negative feedback in a way that reflects the sense of being (or considering oneself as being) in a hierarchically superordinate position (for details, see Table 3). We also found messages requesting that certain actions be allowed, thus indicating that the senders are, or feel themselves to be, in a subordinate position. It is interesting to note, however, that only 17 of the 1387 messages sent in October contain direct commands. Thus, although signals of hierarchical communication can be identified, at least the general tone of communication in KnowledgeFactory does not seem to be imperious.

In Table 3 we distinguish between two types of messages according to their content: (1) messages that contain no signal indicating a hierarchical relationship, and (2) messages that contain at least one such hierarchical signal. In the second group we differentiate between two variants: (a) messages in which the sender uses an upgrading signal, i.e., the sender signals that s/he is, or feels that s/he is, in a subordinate position in relation to the recipient of the message, and (b) messages in which the sender uses a downgrading signal, i.e., indicates that s/he is or perceives herself/himself to be in a superordinate position. 62.94% (873 messages) of all messages contain no signal indicating a hierarchical relationship between sender and receiver. However, 514 messages, i.e., 37.06% of all messages, contain hints at the existence of hierarchical relationships. In 142 of these messages (10.24% of all messages), the sender uses an upgrading signal, while 348 messages (25.09% of all messages) indicate that the sender is, or feels that s/he is, in a hierarchically superior position. Twenty-four messages contain upgrading and downgrading signals.

Discussion

Our study shows that the rules and the culture of the organization concerned are in line with the core ideas of the network organization, as these are presented in the general literature. Further, our results show that the intranet was extensively used in the case organization as a medium for internal communication, and that it became a symbol of the network organization in its own right.

However, a center–periphery structure became visible in the communication network. The center consisted of organization members who were more closely linked within the organization. Other organization members on the periphery used the intranet to connect themselves to these core communication members. A comparison of the center–periphery structure with the mentor network reveals that the core consists primarily of members at higher levels

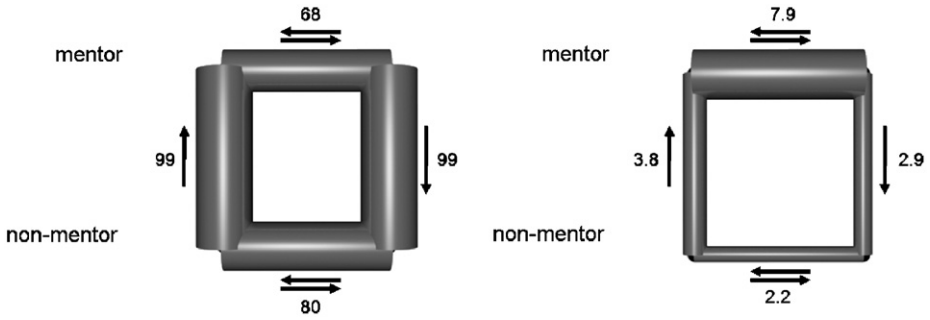

Figure 8 (a) Absolute number of communication channels, classified by direction and (b) average number of messages sent per type of channel, classified by direction.

Table 3 Content analyses of messages sent in October 2001.

Contents of messages	No.	Percent (signals)	Direction
Technical/task-related information	448	18.14	
Technical/task-related feedback	248	10.04	
Request to complete a task, to initiate an activity or to postpone initiating an activity	220	8.91	↓
Technical/task-related questions or requests	160	6.48	
Message of thanks	131	5.31	
Non-classifiable messages	131	5.31	
Appointment coordination	129	5.22	
Feedback concerning technical/task-related problems	120	4.86	
Duplicate messages	101	4.09	
Communication of need for coordination	94	3.81	
Social messages, not directly related to tasks	87	3.52	
Politely formulated direct instructions	51	2.07	↓
Request for information	49	1.98	
Request for decision, finalization, instructions	48	1.94	↑
Feedback when a task has been completed	46	1.86	↑
Jokes	45	1.82	
Request to change method of communication (telephone)	39	1.58	
Negative feedback	39	1.58	↓
Direct instructions formulated as request	39	1.58	↓
Positive feedback	34	1.38	↓
Apology, justification, explanation (defensive)	31	1.26	↑
Request for an action to be allowed	27	1.09	↑
Personal (private) messages	22	0.89	
Feedback when a task has not been completed	21	0.85	↑
Direct command	17	0.69	↓
Other messages	15	0.61	
Confirmation of appointment	14	0.57	
Decision, communication of a decision	11	0.45	↓
Micropolitics	11	0.45	
Feedback that an instruction or decision has been understood	10	0.41	↑
Granting of an action	10	0.41	↓
Command/instruction for a third person	7	0.28	↓
Enquiry to ascertain whether a task has been completed	5	0.20	↓
Complaint	3	0.12	
Enquiry as to whether there is need for coordination (technical/task-related)	2	0.08	
Enquiry as to whether support is needed to complete a task	2	0.08	↓
Request for appointment	2	0.08	
	2469		

in the mentor hierarchy, while the periphery consists of lower-ranking organization members. Further, a study of the communication behavior in relation to the formal distance between organization members revealed that most communication occurred in the area close to the formal position of the organization member concerned in the mentor hierarchy. Measures such as the influence domain, the closeness centrality and the betweenness centrality of the communication and the mentor networks—which we distinguished analytically—are strongly correlated. For the observed communication network in which these measures are correlated, the formal structure of the mentor network is a good proxy for communication behavior on the intranet. Centrality, position and formal distance in the mentorship network are replicated in the communication network. Thus, concepts that are analytically differentiated in graph theory overlap in the social reality of our case company. This analysis of communication behavior shows clearly that the implementation of intranet technology and the use of the principles of the network organization did not result in a communication structure like the one described in the literature of network organizations. Instead, two central concepts of the bureaucratic organization were reproduced, namely hierarchical communication structures and official channels (see Table 4). Further, the analysis of the content of the messages exchanged on the KnowledgeFactory intranet reveals that not only the structure but also the substance of the communication reflects hierarchical relationships between the organizational members.

This divergence between the culture of the organization as reflected in devices such as the network symbol or the various social activities on the one hand, and the actual

Table 4 Formal and established organizational structure.

Dimension	Formal	Established
Specialization	Low	Specialization in terms of communication roles
Configuration	Undefined, ad hoc, depending on problem/ task	Hierarchy of mentors
Coordination	Organizational culture	Along the hierarchy of mentors
Formalization	No written rules	Intranet as a memory store of organizational knowledge with free access to all members

communication behavior of the members of the organization on the intranet on the other, raises two questions:

(1) Why did the members reproduce typical elements of bureaucratic organizations?
(2) How did they handle the disjunction between norms and actual behavior?

In seeking to answer these questions, we refer to two seminal texts in new institutionalism literature, namely Zucker (1977) on the persistence of institutionalized behavior, and Meyer and Rowan (1977) on decoupling. However, we would like to point out that our findings are tentative, and that further research is required before our interpretation can be either rejected or confirmed.

Persistence of bureaucratic behavior

When it comes to the specific communication behavior on the intranet in our case company, two contexts at least have to be considered. The first is the specific organizational context of KnowledgeFactory, which reflects the founders' attempt to establish a networked organization. The second is the wider institutional context in which institutionalized beliefs about appropriate behavior in organizations prevail and are carried further in socialization processes. We argue that it is these institutionalized beliefs about appropriate behavior that dominate the behavior that ensues. The fact that KnowlegeFactory exhibits many characteristics of a traditional organization strengthens our conviction that this is so.

The rooms in KnowledgeFactory in which most of the work was done, clearly signaled by such things as their lighting and furniture, that they were offices. Another important cue indicating an organizational context was the existence of specific contracts, e.g., employment contracts. Further, individual people's social positions were denominated by labels as commonly applied in companies, e.g., ''CEO'' or ''senior consultant''. Such labels are linguistic symbols that transmit social expectations regarding appropriate forms of conduct (Berger & Luckmann, 1967; Czarniawska-Joerges & Joerges, 1990). Further, KnowledgeFactory introduced a hierarchy of mentors based on criteria that are typically adopted in constructing hierarchies for (small) business organizations, namely ownership and qualification. Furthermore, the members of KnowledgeFactory could easily identify the social position of their respective communication partners in the mentorship network on the intranet. We thus suggest that in KnowledgeFactory physical objects, linguistic labels and familiar symbols were structural hints as to an organizational context indicating the rules of conduct that actors in such a setting are expected in general to apply.

As Zucker (1977) showed in her laboratory experiment, a few cues—used to signal that an individual is located within an organization—are all that is required to trigger behavior that is regarded as institutionalized action, i.e., behavior that is typical of the way individuals act as jobholders in organizations. In our case company, there were, as we already noted, many cues signaling that this was an organization. And we know from our interviews with members of KnowledgeFactory that these people perceived their workplace in such terms. For example, as our respondents told us, this was obvious from the communications on the intranet which signaled an organizational context by both definition and access. Further, the intranet delivered not only cues for an organizational context but also for positional differences between communication partners, i.e., being a mentor or being a mentoree. As Zucker (1977) has shown, the existence of positional differences reinforces the effect on behavior that an organization—as a cognitive institution—exerts. Organizational cues and cues that indicate positional differences both allow for the establishment of general communication rules that take account of formal (e.g., mentor) relationships and the positioning of organizational members. Thus we argue that principles of bureaucratic organization do indeed matter, even if they are suppressed.

Managing the disjunction between norms and behaviors

From our interviews with founders and employees of KnowledgeFactory we became convinced that neither of the groups concerned had intentionally caused the disjunction between behavior and meaning with a view to projecting the image of a post-bureaucratic organization while actually acting within the company according to bureaucratic principles. After all, they were seriously attempting to build a network organization and were not themselves aware of any disjunction. The founders were actually astonished and disappointed when we presented our findings. ''But that's not what we wanted at all'', as one disillusioned founder put it. The founders' astonishment can perhaps be explained by the fact that everyday communication behavior on the intranet had simply not been visible to them, until they were confronted with the findings of our study. Nor did they seem to be aware of the weak signals suggesting the presence of hierarchical relationships. As they saw it, they were using the intranet, they were sending and getting messages, they were embedded in an environment full of the symbols of a network organization, and—as became clear in the course of the interviews—they were firmly convinced that they had banished many of the traditional elements of organizations that they regarded as inefficient. Thus in our case study decoupling means that the

non-existence of typical elements of formal structure represents the face that the organization shows to its members and the rest of the world (Brunsson, 1989; Meyer & Rowan, 1977). The production of certain elements of formal bureaucratic organization, however, seems to be the result of the unconscious reproduction of deeply sedimented cognitive institutions. As Scott (1994) reminds us, the institutional environment is not only "out there"; it is "in here", in the minds of the organization's members.

Four factors may lie behind the surprising amount of unrecognized inconsistency between culture and symbols on the one hand and actual behavior on the other. These are: (1) an emphasis on informal communication, such as we found in the case company, does not preclude communication along formal relationship lines, although there has been no intention to reproduce communication channels reflecting mentor relationships. In the terminology of Clemens and Cook (1999), we could say that the members' interpretation of a "may-rule" in the network organization—i.e., a rule that does not regulate behavior in any specific way but remains open for alternative behavior—led to the reproduction of bureaucratic structures. This interpretation may have been affected by attempts to reduce or even avoid uncertainty about the possible consequences of a deviation from institutionalized organizational behavior. (2) Even in a networked organization such as KnowledgeFactory—in which integration is intended not only for an individual's actions (see Barnard, 1938), but for the individual as a whole—it seems likely that people will still distinguish between their own personal actions and interests on the one hand, and their institutionalized roles as organizational members on the other. Through socialization they have become accustomed to differentiating between personal actions motivated by their own interests—i.e., acting as agents of the self, as Meyer and Jepperson (2000) put it—and the actions they perform as members of an organization, i.e., as the agents of other agents. (3) The expected informality may emerge in face-to-face-communication with other organizational members, while the delegitimized hierarchy-oriented communication behavior may be activated unconsciously in the reduced visibility of the intranet communication. Thus, the sequencing of activities and the decoupling help to reduce the tension between conflicting conceptions of what is appropriate behavior. (4) The tension between the non-hierarchical communication norm and the hierarchical signals that appear in the intranet messages may have been partly concealed by avoiding direct commands and instead using soft versions of hierarchical communication such as politely formulated instructions.

Implications

Case studies have their limitations when it comes to generalizing their findings beyond the particular context. Further, we have to admit that our study is limited in that it only compares the realization of a network organization with the idea that the organization's founders had of a post-bureaucratic organization. It is thus possible that the communication structure that we have identified is less hierarchical and centralized than is usual in bureaucratic or traditional organizations. Consequently it is also possible that the communication behavior observed was in fact affected by the case company's organizational culture and by its founders' attempts to institutionalize a post-bureaucratic organization. Moreover, there are some indications—for example, the assignment of mentorship roles based on criteria typical of German firms in creating formal hierarchies—that our findings may be affected by their German business context. Thus, suggestions for future research would be not only to compare the communication structure of different types of organizations but also to compare the implementation of new organizational forms across countries, in order to learn more about the national interpretations of globally diffused ideas about organizing (Czarniawska & Joerges, 1996). Further, the findings of the present study suggest a number of further areas that need to be addressed by future research. If our interpretations of the communication behavior of the members of our case study firm are correct, it will be necessary to look further into possible ways in which cultural–cognitive institutionalized rules or institutionalized belief-systems affect behavior in organizations. Further, it will be necessary to investigate whether cultural–cognitive institutionalized rules are open to intentional change. Would it be possible, for example, and perhaps more effective to change institutionalized behaviors first at the level of individuals or groups, as proposed by Lewin (1947)? We feel that it is of the utmost importance to address the questions that our study has raised.

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articles

What Can an Apple Learn from an Orange? Or: What Do Companies Use Benchmarking For?

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Abstract. *The inflation of new management concepts in recent years has triggered a discussion that these concepts should be seen as 'management fashions'. Often linked to this perspective is the notion that these concepts are used as rhetorical means to legitimize the organization, and that they remain decoupled from work activities. Subsequently, empirical studies focus on the diffusion of a new management concept or the intensity with which a new concept is discussed in the literature. A systematic analysis of the contents and the conceptual elements of the new concepts, and a systematic comparison of old and new approaches are rarely undertaken. To avoid a lop-sided view of new management concepts, we argue that the discussion of 'management fashions' requires an analysis of the core ideas underlying a new concept as well as systematic comparisons of old and newer approaches. Benchmarking (BM) as a new 'management fashion' is used as an example to show what such an analysis could look like. An explanation for the upswing of BM will be presented, wherein BM is seen as a continuation of Taylor's concept of scientific management. An analysis of the core elements of BM shows why it is an attractive instrument for management. However, this analysis does not entirely explain the increasing spread of the concept. It is not clear as to what motivates the industry's best to offer themselves as a benchmark for others, and further explanation for this will be given. From a managerial perspective, BM is a method for emulating price and quality competition, as well as increasing employee motivation and performance.* ***Key words.*** *benchmarking; competition; management fashion; management theory; organization theory*

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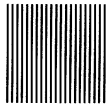
The inflation of new management concepts and approaches in recent years, such as Quality Circles, Total Quality Management, Lean Management, Business Process Reengineering or Balanced Score Card, has triggered a discussion in academia, as to whether these concepts should be seen as fashions which come and go rather than as technical tools which enhance the efficiency of organizations or as processes of collective organizational learning (Abrahamson, 1991, 1996; Kieser, 1997; Røvik, 1996; Ramsay, 1996). This discussion stems not least from the often observed discrepancy between claim and reality (see, with respect to Total Quality Management, Reger et al., 1994; Hackman and Wageman, 1995). Linked to this perspective is the notion that these concepts and approaches are only used as rhetorical means to legitimize the organization and that they remain decoupled from the work activities or the technical core of organizations (Meyer and Rowan, 1977; Kieser, 1997). This seems to be problematic since, according to some authors (see, for example, Hilmer and Donaldson, 1996), it is unlikely that management will adopt a new concept if it does not expect any benefit from it.

Currently, studies of 'management fashions' focus on the diffusion of a new management concept or the intensity with which a new management concept is discussed in the literature. Diffusion is measured by the number of organizations that state that they have adopted a certain concept or by counting the number of articles that have been published at a certain point in time in certain journals. A systematic analysis of the contents and the conceptual elements of the new management concepts, and a systematic comparison of old and new approaches are, however, rarely undertaken. As a consequence, the conceptualization of new management concepts as fashions, and of the succession of new management concepts as the coming and going of fashions, narrows the view. The possibility that old concepts could be further developed and sold under a new label is excluded by such a conceptualization and such an empirical approach. Furthermore, the possibility that a new concept might have functions for managerial practice, other than those that are to be found in the general rhetoric used to sell the concept, is not considered. To avoid a lop-sided view of new management concepts, we argue that the discussion of 'management fashions' requires an analysis of the contents of new management approaches, and that it is thus insufficient to investigate their diffusion and/or the consistency of their rhetoric alone in order to understand 'management fashions'. Rather, an analysis of the core ideas underlying certain 'management fashions' and systematic comparisons of old and newer management approaches are required. Benchmarking (BM) as a 'new management fashion' is used as an example to show what such an analysis could look like.

In this paper, we will present a possible explanation for the upswing of BM, wherein BM is seen as the perpetuation and a further development of classical management theory. An analysis of the similarities and



differences between BM and Taylor's concept of scientific management shows why BM is an attractive instrument for management. The analysis clarifies that the rationalization potential of BM is not at the level of individual activities of workers, however, as was the case with scientific management, but at a more abstract level. Today, it is middle and senior management who are targeted. BM deals with processes and process chains, and management processes become more transparent.

However, despite the 'rationality' of the concept, we will explain in the first part of our analysis that this does not entirely explain the increasing spread of this concept. It does not become clear as to what motivates the industry's best to offer themselves as a benchmark for other companies. Here, we will develop our analysis, which should be regarded as a proposition for future research. From a managerial perspective, BM is, we will argue, a method for emulating price and quality competition, and it can be used in this way in an attempt to increase employee motivation and performance.

In our analysis, we will make use of a number of different perspectives. We are aware of the fact that this approach is untypical in the study of management and organization, and that it may be seen as lacking theoretical rigor. However, we argue that, in order to understand BM, it is necessary to analyze it from a multitude of perspectives. Our method is based on Max Weber's conception of sociology:

> Sociology . . . is a science concerning itself with the interpretive understanding of social action and thereby with a causal explanation of its course and consequences. We shall speak of 'action' insofar as the acting individual attaches a subjective meaning to his behavior—be it overt or covert, omission or acquiescence. Action is 'social' insofar as its subjective meaning takes account of the behavior of others and is thereby oriented in its course. (Weber, 1968: 4)

According to Weber (1968: 7):

> [E]very artifact . . . can be understood only in terms of the meaning which its production and use have had or were intended to have . . . Without reference to this meaning such an object remains wholly unintelligible. That which is intelligible or understandable about it is thus its relation to human action in the role either of means or of end; a relation of which the actor or actors can be said to have been aware and to which their action has been oriented. Only in terms of such categories is it possible to 'understand' objects of this kind.

This approach to social phenomena does not preclude the use of other theories. Rather, it is our view that a phenomenon can be analyzed more comprehensively when different perspectives are used to clarify the aim or character of an artifact or management concept. The selection of perspectives is not, however, random but is rather determined by the phenomenon to be analyzed and its context. Applying this argument to BM we recognize that it is sometimes necessary to adopt a managerial

perspective. As the analysis aims to increase understanding, we will thus use an approach which is shaped by a particular ideology (Merkle, 1980).

It is, however, necessary to supplement this method with a critical perspective in order to understand the increasing spread of BM. On the one hand, the consequences of BM for those at whom it is targeted must be considered. From such a perspective, BM is an instrument for maintaining power and control. On the other hand, a critical perspective of BM problematizes the functionality of the concept according to its proclaimed aims. Such a perspective highlights that BM, as it is portrayed in the literature, can only function with difficulty. It remains unclear as to what motivates companies to offer themselves as benchmarks for others. It is not our intention, however, to evaluate the veracity of claims made about BM in order to reject it as a tool that has little use. Rather, we want to shed light on those functions of BM that are less obvious, i.e. that are more covert or latent, and not discussed in the general literature on BM. In order to do this, the perspective must be further expanded. These latent functions of BM can only be understood when the concept is regarded as a social construct (Berger and Luckmann, 1966), the latent functions of which are hidden behind the general rhetoric which promotes the interests of management (Huczynski, 1993; Jackson, 1996, 1999). We will show that BM serves to generate competition and, therefore, fits with management's dominant perception of reality. In addition, we will show that BM is particularly effective in bringing into line the perception of reality of those at whom it is targeted with that of management, therefore enabling management to steer the perception of employees in the desired direction (Burke, 1962).

We do not claim that the perspectives that we have chosen can be used to explain every 'management fashion'. We do, however, argue that Max Weber's method of understanding and the way in which we use it in our analysis, can aid in explaining the phenomenon of 'management fashions'.

The Principles of Benchmarking

One of the definitions of BM generally accepted in management practice is that 'Benchmarking is the search for industry best practices that will lead to superior performance' (Camp, 1989a: 68). Thus, BM takes its place in the tradition of classical management theory, which, according to Kieser (1995: 57), is based on the following method: 'One identifies the best, i.e. reliable practice and tries to formulate rules so that others can also put the best practice into effect'.[1] BM prescribes a method with which 'best practice' not only should be systematically identified, but also can be institutionally established. From this perspective, BM should be built into the organization and it should be understood as a means of continuous improvement.

Similar to scientific management, the attraction of BM lies in replacing universal organizational principles with the prescription of a method (Kieser, 1995: 68). However, BM goes beyond scientific management; in BM, the prescription of universal management principles has not only partly but also *completely* made way for the prescription of a method. While Taylorism also contained a very detailed concept of organization along with one prescribed method, BM is rather abstinent regarding a specific organizational design. Any organizational process or structure can basically be connected to this method, as long as it seems appropriate to the participants to utilize it in order to close the gap between desire and reality that has been identified through BM. Thus, the substantive core of BM is the method.

The units of analysis for BM could be products, structures or processes. In principle, however, advocates of BM believe that there is nothing that could *not* be the object of BM. Supporters of BM are convinced that their concept is universally applicable (Burckhardt, 1995; Pieske, 1995). Here, we limit this study to the case in which BM targets a company's organization, i.e. the case in which a company's processes or procedures are subjected to comparison.

It does not seem clear what distinguishes BM from the classical analysis of competitors, which has always been an instrument of strategic management (see, for example, Porter, 1985). For BM within industries, the difference is not great. More obvious are the differences concerning both functional and generic BM. Functional BM takes place within an industry but does not include direct competitors, while generic BM focuses on the best of the best, regardless of industry, product, or size (Balm, 1992).

According to many protagonists, generic BM reflects the true core of the concept, its real novelty and effectiveness (Camp, 1989b; Langner, 1994; Töpfer and Mann, 1997; Watson, 1993). However, as will be shown later, this form of BM seems to be so 'obviously' problematic that it hardly seems worthy of theoretical consideration by students of organization and management. However, according to Bourdieu (1994), what may initially seem irrational or illogical from a scholastic point of view may be very efficient in terms of the 'logic of practice', i.e. it satisfies the needs of practitioners. The theoretical challenge is both to highlight this 'logic of practice' and to make a break with practice in order to identify the latent functions which it can have in practice.

We will start by presenting the development of BM. We will then compare BM to an older 'tool' from classical management theory, namely scientific management. We will finally consider the specific functions of BM in order to develop the analysis.

Origin and Development of Benchmarking

A more or less true construct of one or more success stories is extremely important and helpful to the spread and success of a management

technique or approach (Kieser et al., 1998). Taking into consideration that the basic principle, namely the identification of 'best practice', is not exactly new (Schott, 1941; Krömke, 1958), the rhetoric achievement that marked the success story of Xerox as the starting point of the 'benchmarking movement' seems impressive; ever since, Xerox has been regarded as the founder or pioneering company of BM.

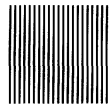
At first, the pioneering act consisted of an operation that was hardly unusual, namely the analysis of production costs. The analysis showed that Xerox's production costs were as high as the sales prices of Japanese producers (Tucker et al., 1987). Xerox was subsequently benchmarked against the logistics department of a company in another industry. It became a success story because, according to Robert Camp, a member of Xerox's planning staff and author of many BM books, it was very successful and, possibly in interaction with other fortunate circumstances, ultimately led Xerox back to competitiveness.

Tucker et al. (1987) claimed that annual productivity increases of 10 percent can be achieved with the help of BM. The foundation was thus laid for the 'Bible for Benchmarking, by Xerox', the basis of the 'doctrine of salvation', which has subsequently spread throughout the world. In the following years, the most successful and well-known companies in American industry were encouraged to emulate Xerox's success story. With its integration into modern quality management concepts, such as TQM, and the criteria for quality awards, like the European Quality Award (EQA), BM had spread almost worldwide by the end of the 1980s and beginning of the 1990s.

Also often seen as the birthplace of BM is Japan, whose success in the past decades has been traced back to the fact that Japanese companies analyzed and copied Western ones. The term increased further in popularity when Womack et al. (1992) declared their study of the automobile industry to be the biggest 'benchmarking project' of all time. Just five years later, when they claimed that BM was a waste of time for managers (Womack and Jones, 1996), the 'craze' had already taken off.

More recently, the European Commission discovered BM for its industry and quality policies. Since the ISO 9000 standards did not achieve the success that was hoped for, the European Commission is now favoring the European Quality Award, and also BM in particular (European Commission, 1998).

In Germany, the concept did not become a real 'craze' until 1992/3. Before then, there was almost no literature on the subject. However, subsequently, there have been rapid diffusion of the concept and attempts to implement it, and many consultants have become involved in BM projects. For example, they offer support in conducting BM and attempts to build up data banks in order to either establish contact between interested companies or generate anonymous benchmarks. In Germany, there are hardly any large companies that can get by without using BM. According to a management consultant, 'in no later than two years a manager will only



be considered to be persistent and resolute if (s)he has taken up Benchmarking'. A Kodak board member insists: 'Whoever shies away from comparisons will be kicked out' (Wirtschaftswoche, 1993: 42). A survey shows that in Germany 100 percent of the automobile producers, 80 percent of the companies in electrical engineering, 50 percent of the companies in mechanical engineering, and 40 percent of the suppliers to the automobile industry have experience in BM (Strittmatter, 1996).

The spread of BM has also been promoted by several state or state-funded research institutions. The list of members of the 'Information Center for Benchmarking' (IZB) at the Fraunhofer Institute sounds like a 'Who's Who' of the German industry. It includes companies such as ABB, Bayer, Bosch, Telekom, Henkel, Hoechst, IBM, Siemens and Volkswagen.

'Efficiency Craze' and Benchmarking Fever—'Best Practices' Yesterday and Today

When considering the development of BM, the question needs to be asked whether it is just another organizational concept or 'fashion' (Abrahamson, 1996; Abrahamson and Fairchild, 1997; Kieser, 1997). Fashions, as Kieser (1997) conceptualizes them, are based on myths and rhetoric. Often, they do not have any influence on the technical core of the organization. Fashions, as Abrahamson (1996) portrays them, come and go. According to his understanding, they do influence companies, and that alone would justify a study of BM. At the same time, in his opinion, 'management fashions' are isolated concepts that fade from the market once their rationalization potential has been realized, without having established links with earlier concepts or points of contact for future approaches. This is an extreme way of looking at organization and management concepts.

Another, equally extreme point of view is hinted at by Drumm (1996: 8). He tends to believe the exact opposite: 'We've seen it all before, that's old hat!' This is, of course, where one must agree with Drumm; previous concepts do leave their traces and a lot seems familiar at first glance. Comparisons of old and new concepts often conclude that the differences or the novelty of the 'new' concepts are limited primarily to a new rhetoric (Kieser et al., 1998). Thus, 'old wine in new bottles' is the ultimate result of such an analysis. What is unsatisfactory and disquieting about this reproach is not that it is unjustified, or that it has become boring, but rather that it obscures what is different.

It rarely matters which new organization or management concept appears on the market. When a new management concept is only seen from a certain perspective, i.e. an abstract point of view, it is not difficult to show that in most cases we are dealing with very old wine in new bottles. In our opinion, however, when the comparison of something new and something old does not go beyond the principle underpinning the concepts, access to the new, now only seemingly new, is obstructed. Analogously, access to continuity in management concepts is obstructed

when consideration is not given to parallels between different concepts. In the following analysis, we attempt to avoid both of these obstructions.

We argue that a new management concept should obviously not jeopardize basic managerial ideology; however, it should still offer something new in order to become a 'management fashion'. We therefore compare BM to scientific management, which currently *seems* to be very 'unpopular', but is still very successful, as witnessed by the scientific management approach to organizing call centers (Frenkel et al., 1998; Knights and McCabe, 1998). Many other authors have also highlighted the close relationship between these two concepts. Even well-known authors of books on BM like Watson (1993: 5), and advocates of BM such as the European Commission, point out that there are parallels in the principle underpinning the concepts of scientific management and BM. For example, in the Quality Series published by the European Commission (1998: 13), the following statement is made:

> BM is one of the last words to be introduced into the lexicon of modern management. However, the BM concept is not new. The studies performed by Frederick Taylor on the scientific methods for work organization based on the comparison of processes may be seen as a starting use of the concept.

The idea of comparing a new management concept with scientific management and of identifying their common points is not therefore new or particularly original (see, for example, Wilkinson and Willmott, 1995). In fact, it cannot be ruled out that, if it is to be embraced by the management mainstream, one requirement of a new concept is that it has to be in line with the ideology of scientific management (Huczynski, 1993).

However, in contrast to previous authors who have concentrated on the argument that new management concepts have commonalties with scientific management in terms of ideology and organizational design, we will illustrate that BM has commonalties with scientific management in terms of ideology and, more importantly, method.

The 'Experiment' in Scientific Management and Comparison with the Best in Benchmarking as Methods for Enhancing the Efficiency of the Organization

The 'scientification' of management theory through Taylor's 'experiments' contributed greatly to the success of the concept. Taylor not only identified 'best practices' and transformed them into generalized rules so that they could be realized by management on a wide scale, but also enriched management theory with a method for optimizing the organization (Kieser, 1995). Taylor's recipe for success consisted primarily of developing a systematic method, the 'scientific experiment', for identifying maximum possible performance for each activity (Taylor, 1911).

The decisive moment in Taylor's scientific 'experiments' was that it was possible to produce a 'scientifically secure' point of reference, against which the actual performance of each worker could be compared. The 'experiments' were aided by the manipulation of conditions. Among

other things, specific workers were chosen for the 'experiments' and motivated to peak performance by monetary incentives (for a detailed critique, see Kieser, 1995). Whilst such an 'experiment' might 'prove' that a certain level of performance is attainable, it is not possible to demand this level from each worker. Another worker might quite simply not have the same physical ability to reach the performance level that, for example, the worker Schmidt, chosen to load pig iron, did.

However, we do not feel that this critique is really sufficient, i.e. the purpose, of Taylor's 'experiments'. The fundamental point of these types of 'tests' was to show others (in Taylor's case, workers and management) in a drastic manner that *significantly more* could be performed. It is important, not only regarding Taylor, but in general when a new management concept is to be established, that the gap between present and possible performance be as *dramatic* as possible (Kieser, 1997). With Taylor it was impressive because he showed that between 47 and 48 tons could be loaded per worker per day, instead of the usual 12.5 tons. With 'experiments' à la Taylor, the fundamental meaning lay in the rhetoric effect which could be produced with the help of *the reality that the experiment creates*. We therefore believe that the major attraction of BM is that it provides a method, which compares a possible (enhanced) state with an existing state in a similar manner, making certain actions appear inevitable if communicated in the 'right' way. It is not therefore surprising that one of the terms most often used in BM is the 'benchmarking gap'.

However, as with Taylor's 'experiments', in order to be perceived as legitimate, BM must be seen to be a method which implies a systematic procedure (and if possible also a valid one) producing credible points of reference:

> The novelty of Benchmarking is the system and discipline of looking beyond one's own company and searching for and identifying the best in products, processes or functions . . . Without the system of Benchmarking, the company does not know how competitive it is. (Burckhardt, 1995: 15)

In this respect, BM requires at least two companies to sample the relevant data and to present them in the manner necessary for comparison, which generally means in documented form. Otherwise, it is difficult to convey to those it targets that BM is a meaningful (rational) instrument. However, for those who want to apply and use it, we argue here, the actual comparability of the data is of minor importance.

The plausibility of a method is of central importance in order that the method is accepted by those whom it targets. A (management) concept must seem meaningful. Its application and the way it works must appear rational (Walgenbach, 1995). As with Taylor's 'experiments', it is of utmost importance to at least create the impression that the procedure is systematic and objective. That is why the 'rationality' of the procedure must be carefully communicated: 'The results are substantiated by facts and data, and are not based on opinions or intuition'. And: 'The suggested

changes are the result of careful analyses, and are absolutely necessary in order for the company to reach its goals' (Richert, 1995: 418).

No wonder, then, that attempts can be observed to underpin BM with advanced mathematical tools, such as Data Envelopment Analysis (DEA) (Schefczyk, 1996; Homburg and Eichin, 1998). However, a systematic procedure or tools like DEA do not make a good method in themselves. For example, what practitioners of BM can actually observe during company visits is questionable. Even intensely prepared visits rarely last more than two to three days, as we know from interviews with BM practitioners of large German companies. Furthermore, it is questionable as to what is actually demonstrated by the examined company during the time that is not spent on welcoming and other rituals of politeness. These problems are seldom thoroughly reflected upon in articles and books propagating BM. The articles and books rarely go beyond the problems of BM, as shown, for example, by Töpfer and Mann (1997: 39):

> . . . the structures and strategies of other companies can still be analyzed with moderate energy and know-how. A process-benchmarking, however, brings considerable difficulties with it as it deals with internal phenomena that can often only be indirectly analyzed by external people. But the processes and employee behavior in particular have an essential influence on the efficiency of a company.

In benchmarking-projects the participants, however, often explicitly prefer an intuitive, emotional impression. Thus, in the literature for practitioners, the question of whether a comparison is possible and meaningful is often not perceived as posing a particular problem. On the contrary, procedures that might otherwise be regarded as foolish are explicitly recommended:

> The fact that apples must sometimes be compared to oranges can often even be helpful. (Langner, 1994: 38)

Camp states:

> Benchmarking in its most thorough application goes beyond looking solely at competitors and uncovers the best practices wherever they may exist, in any industry. (Camp, 1989b: 33)

What is often seen as the core or the real *new* idea in BM is comparison with the best, regardless of the size of the companies to be compared and of the respective industries and the countries they come from. Thus, the focus is definitely not on reliable comparability, but rather on abstracting contingent conditions that are felt to interfere:

> The less you know about the companies and the industries, the more you will concentrate on the main thing, which is the management system, and not get lost in technical details. (Langner, 1994: 39)

The BM expert does not, however, simply start to benchmark, nor does (s)he ascertain all the data that might possibly be relevant and that would have to be considered in a scientific study, but rather concentrates from the beginning on those areas where (s)he suspects the biggest potential to

increase efficiency lies and where (s)he believes spectacular success is possible (Hoffmann, 1996; Schreier, 1997). In this respect, the fact that the typical procedure in average benchmarking-projects leads to a very limited and selective perception and portrayal of reality lies in the nature of such a procedure. As will be shown, this does not necessarily contradict the interests of those who use such a tool. Besides, BM as an exact method would inevitably take too long to conduct from the practitioner's point of view, and would probably not produce results which are easier and neater to communicate.

Thus, BM is a long way from being 'state of the art' in organization and management research. The critique that apples are compared to oranges, which more recent studies conceptually based on the contingency approach in organization theory try to rule out through a suitable arrangement of the sample, does not apply to BM. This is, therefore, a first indication that the actual comparison is not the essence of BM.

It rarely poses any difficulty to conclude an analysis of such methods and concepts by showing that they are problematic. Perhaps that is one reason for the ongoing lack of systematic analyses of BM in organization and management studies. A first glance already clarifies that this concept lacks validity, and thus students of management and organization need not occupy themselves with it. An experienced eye quickly recognizes that BM basically works in a very similar way to scientific management and, in this respect, we have actually seen it all before! A second glance at BM, however, highlights important differences in the detail.

For example, contrary to Taylorism, BM aims, or rather depends on, employees making their knowledge explicit in order to identify and close the aforementioned performance gaps. The task of providing knowledge cannot be left exclusively to experts, as was the case with Taylorism, which targeted workers and foremen. Today, managers must be made to activate and reveal the knowledge that is in their minds. Thus, the concept means consciously leaving (and having to leave) the execution of BM up to the employees after a certain amount of practice (Walleck et al., 1991). Although this has several advantages, there are also problems. One advantage is that employees show less resistance to adopting the measures (Tucker et al., 1987). Commitment and pressure to act can be achieved more easily through (controlled) participatory benchmarking-projects. A further advantage is that employees are required to generate suggestions on how the 'best practices' could be adopted:

> They [the employees] know best where time, manpower, materials, and motivation, and, as a result, the interests of customers, are lost in their departments. (Töpfer and Mann, 1997)

Camp's view is similar:

> People who actually perform the work tasks are most capable of determining how the findings can be incorporated into the work process. Their creative talents should be used to perform this essential step. (Camp, 1989b: 19)

However, if managers are left with too much freedom to decide whether, how and with whom they want to compare themselves, and which conclusions to draw, then what is considered in Germany to be BM's biggest problem can arise all too easily:

> In informal exchanges of experience it is mentioned that top management often interrupts the benchmarking-process after having attained information on the data of the top of the class. (Burckhardt, 1995: 17)

The dropout rates are said to be as high as 80 per cent (Burckhardt, 1995). In this regard, 'picking the employee's brain' (Ehrhart, 1995: 1351) appears to be a problematic and constantly threatened project.

Thus, the true art of BM appears to lie in attaining a sort of snowball effect. Unlike scientific management, emphasis must be placed on establishing (institutionalizing) the new concept in the minds of employees, and not so much in the formal structure of the organization. In addition, a communication process must be initiated which actively motivates members of the organization to continually pursue BM and to implement its results (Camp, 1989b). Naturally, it is more difficult to do this than it is to physically stand behind individual workers with a stopwatch, and to formulate clear procedures afterwards, which make it relatively easy to check if they are being upheld. However, if BM has been established successfully, then there does seem to be a more effective way of encouraging changes in behavior and enhancing self-discipline.

BM also differs from scientific management by virtue of the target group or system. BM targets indirect costs or overheads that elude a direct performance and cost check (Hoffmann, 1996), and thus targets middle and senior managers. A 'distrustful' scenario, which has not been explicitly stated, assumes that managers are aware of the weak points of their company, division, or department. It is assumed that they (actually should) know what must be done in order to catch up with the competitors, or even to surpass them, but that they do *not* do it. If BM can be institutionalized as 'best practice' (also industry-wide), managers are forced to launch activities in their areas of responsibility, which helps them to catch up with the best. The behavioral assumption analogous to that of Taylor shows itself here, namely that employees could do far more and that, instead of doing it, they collectively refuse to work efficiently. However, such statements are only subliminally discernible in the BM literature; the metaphor of organizational learning is used instead.

When the similarities are emphasized, existing rhetorical differences between the two concepts may not appear to be fundamental, but that does not mean they are unimportant. For example, compared to Taylorism, the word 'compulsion' does not really fit into the philosophy of BM. Rather, change in the minds of managers should lead them to implement BM 'voluntarily' and continuously, because they feel it is the 'right' concept (Kempf and Siebert, 1995). However, this does not mean that there is no form of control in BM:

> The strategy is to change the general behavior of employees. This starts firstly in the minds of managers and is then carried over to employees. However, that alone is not enough. What has been learned through comparisons must be measured and compared again. Concrete goals for improvement have then to be derived from this and rigorously controlled, otherwise nothing will change. (Grunwald, 1995: 145)

Also contrary to Taylorism is the fact that BM focuses not on individual activities but on processes. Similar to Taylorism, BM deals with eliminating superfluous tasks (e.g. steps of a process), or optimizing processes, for example through clear definitions of interfaces. Thus, it becomes clear that BM cannot work without the cooperation of teams and management, because benchmarked processes are in general not limited to the activities of a single workplace, but consist of a series of activities of various employees, and in some cases even various departments.

Setting New Standards

The method for setting standards seems to us to be central in both BM and scientific management. Although this aspect is relevant for other management concepts as well, e.g. in MBO, this function is emphasized in scientific management and BM. Here, too, similarities and differences between the two concepts can be identified. Unlike scientific management, the sources of information for determining the 'best practice' for a specific process seem to lie exclusively *outside* of the company in BM. The possibilities of setting new standards through comparisons within the organization or through an inter-organizational comparison with immediate competitors are, according to the advocates of the concept, useful in 'practicing' BM but are not part of the 'actual' BM idea. It is claimed that quantum leaps can only be achieved by 'looking beyond the end of your own nose'.

However, interestingly enough, companies spend an average of 45 percent of the information-generating phase in BM on making their *own* processes transparent, measuring them, even beginning to reorganize them, and bringing them into order (Körschges, 1995; some of the practitioners we interviewed named even higher percentages). Naturally, defining, documenting, and especially making processes calculable, for example through process-based cost calculation, are essential foundations and preconditions for comparability. The phase of data-sampling already contains and offers considerable, if not the decisive, potential for rationalization:

> 3M strongly shares the currently held opinion that up to 70 percent of the steps in a process may be dispensed with because they do not increase value. The process analysis can offer such useful revelations that they alone can lead to a new development, without the subsequent measures for comparing data. (Körschges, 1995: 24)

However, when the processes have been identified and the comparison has been completed, it is possible to ask such questions as the following:

- Which of the two processes is faster and leaner, and why?
- What can each process learn from the other one? (Kaufmann 1996: 33)

When this demand is taken literally, one problematic consequence of this procedure is that the processes of the companies conducting BM become increasingly similar (DiMaggio and Powell, 1991). Inevitably, then, the long-term result of this strategy would be no competitive advantage! (Although it seems unlikely that the copy would surpass its original.) Thus, becoming a good 'average' is all that one could expect from this method in the long term.

However, as far as industry-specific BM is concerned, which usually concentrates on variables that can be defined fairly clearly and on organizational areas that are relatively easy to narrow down, it could be executed in a comparatively valid manner. We are, then, basically dealing with an analysis in the tradition of the contingency approach in organization theory. There are, however, a number of weaknesses to that approach (Kieser and Kubicek, 1992). One important reproach made to contingency theory was that it promotes conservative, or already existing, forms of organizational design and does not generate innovative structures that can create competitive advantages for companies. This does not mean that it might not be useful to find out if and how far a company is lagging behind its competitors. However, this procedure does not lead to BM's declared aim of becoming the 'best of the best' (Hoffmann, 1996: 36).

When, however, it is applied in companies that are in completely different situations, BM as a method does not fulfill those demands requested in comparative studies, precisely because apples are compared to oranges. We believe that, in practice, generic BM seems to present problems too, so that, if one takes into account the BM procedure suggested above by Kaufmann (1996), one has to ask: 'What can the apple learn from the orange?'

Here, ultimately, the question arises as to why BM is conducted at all and why companies are not content to simply analyze their own processes. We propose here that the striking power of BM lies precisely in this superficial comparison. An internal process analysis alone is just not enough. Even the most thorough analysis and documentation of a process do not produce the incentive to 'draw as much as possible from it'. The company lacks that convincing data which can be obtained through 'experiments' or 'systematic' comparisons of what is 'really' possible. Whilst, in scientific management, Taylor could refer to the outstanding performance of the worker Schmidt to set new standards in a company, in BM evidence from outside of the company is required.

Of course, one can imagine that it could have been possible for Taylor to come up with a stronger or more heavily built man outside the company who could have loaded two or three more tons of pig-iron. However, the standards determined within the company were sufficiently impressive. In order to work out further possibilities for rationalization,

and especially at the level of whole management processes within the organization, it is helpful to look to other companies. New standards can be effectively set and established in the focal company with reference to what is possible in other firms.

However, not just any company is good enough; rather, the company that should serve for the comparison and orientation must be widely known to be excellent, well managed and organized. For example, it is important that this company already has an outstanding competitive position, and that everyone affected by the benchmarking process knows this. That is why a company like General Electric is a popular benchmark. Furthermore, it is said that it is not least thanks to BM that General Electric has achieved its top position. In an unprecedented action that was admired by all its competitors, Jack Welch got General Electric 'on the move'. Among other things, the program for change consisted of the famous workouts and a communication campaign to exchange 'best practices' (Tichy and Sherman, 1993). Ultimately, whether the success attained can really be traced back to these measures (alone) cannot be tested. It is more important and convincing that General Electric's superiority can be impressively documented. For example, one company from the same industry has a 'benchmarking report', that says:

- General Electric's profits surpass those of its six direct competitors put together.
- General Electric's yield on turnover at the beginning of the 1990s was significantly higher, as was turnover per employee.
- General Electric achieved a 10 percent increase in turnover at the same time as cutting back on personnel by 2 percent.
- The shareholder value of General Electric in 1993 was about three times that of the next best competitor.
- General Electric attained a shareholder value per employee of $269,000, while the next best competitor barely managed to attain $88,000.

These are impressive numbers that can easily be communicated to the employees, and which bring the message home. Such numbers can quickly convey to employees that something has to be done urgently, that the organization and management must be brought up to scratch. To establish new standards, it is sufficient if those who are targeted accept the process analyzed in another company as the standard for comparison, and if they believe that the process in the examined company is 'somehow' significantly better, be it only in some small partial area, or in regard to one individual indicative figure:

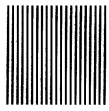
> Benchmarking has the advantage of being able to convince those concerned that certain practices are not only theoretically applicable, but that they can also be realized in practice. (Gerlach, 1997: 153)

It becomes clear that, contrary to procedures used in studies of management and organization, management concepts like scientific management or BM are not designed to ascertain valid data. It is only of interest that a

rational or comprehensible method, which is not only relatively easily understood but also accepted by employees, be used to establish the new standard in the organization. In Taylorism, this problem was solved with the 'scientific experiment'. Ideally, in BM, comparison with the best leads to the new standard. BM can also be used to clarify what must be changed, i.e. which process must become faster or which superfluous steps must be eliminated. Like scientific management, BM is a systematic (but, we argue, not valid) method of identifying and establishing standards.

However, in practice, the presence of the method alone does not seem sufficient. If the possibilities of this practice are to be ensured on a long-term basis, the interest in seeing cooperation between companies emerge and the spreading of BM seems comprehensible. Furthermore, it is conceivable that efforts are being made to institutionally establish BM as a concept. Thus, in recent years, many benchmarking networks such as the International Benchmarking Clearinghouse have emerged (Ettore, 1993). Such networks should create the myth of trust that is necessary for BM, but also supply the necessary foundation for the arguments that make the usefulness of BM clear to all sides. However, it seems justified to doubt whether trust can be achieved. Cox et al. (1997) provide evidence that the basic conflict between cooperation and competition underlying BM has not been solved even on a rhetoric level.

If one takes the ideal form of BM, namely comparison with the world-class best, this conflict seems to be even more significant because ultimately only one company can attain a clear advantage from the actual 'benchmarking-project'. With respect to the fact that Texas Instruments receives approximately 10,000 requests per year, one can ask how Texas Instruments profits from these activities. Even if only a small number of these requests were fulfilled, significant resources would have to be set aside to receive visitors from other companies, or to allow for the time-consuming activities of one's own employees, such as participation in associations for BM, presentations in workshops, conferences, publications, and much more. It is difficult to imagine such a readiness to reveal the source of one's own competitive advantage in competitive conditions. Only if the factors of success cannot be copied, or can be copied only with great difficulty and much delay, does it seem comprehensible to allow other companies insight into one's own structures and processes. This also suggests that the ultimate goal of BM is not, and cannot be, direct comparison, because the company that is seen as the benchmark will probably not 'lay its cards on the table', at least not regarding important techniques, procedures or processes. Thus, despite some central arguments that certainly speak in favor of BM, the analysis has not yet offered a sufficient explanation as to why outstanding companies are willing to be a benchmark and to propagate BM. Thus, the increasing spread of BM is still not comprehensible. On the contrary, the analysis has actually brought to light a new fundamental question, and the following section will formulate propositions to answer this question.



Emulating Price and Quality Competition

The preceding sections have made clear that, despite the many methodical problems of BM, the procedure does not lack rationality. However, explaining the ideal form of BM plausibly, while taking into account the competitive conditions in western societies, does not sufficiently account for its rapid diffusion. At least from the point of view of the best, BM hardly seems to be a helpful instrument. Motives such as satisfying vanity are not significant enough to be convincing explanatory factors for the readiness to offer one's own processes as a benchmark for others, against the background of the latent danger of losing competitive advantage and of the significant costs arising from the many visits of managers from other companies.

The analysis will be developed further in order to present an argument that could contribute to explaining the phenomenon of BM. It is based on the idea that companies emulate price and quality competition via BM. The starting point for this hypothesis is the composition of those companies that were decisive in creating and promoting BM. A look at the list of companies that have, for example, come together in the European Foundation for Quality Management (EFQM) to promote BM, as well as the aforementioned list from the Fraunhofer Institute, quickly gives the impression that we are dealing mainly with big companies, whose conditions of competition can be described as oligopolistic, and whose product range includes goods of significant complexity. Both factors seem relevant as explanatory factors.

With increasing company size, and a decreasing number of competitors, a company's profits increase significantly, as predicted by microeconomic theory, and as shown by empirical studies (Friedman, 1983; Schmalensee, 1989). The price that the company attains on the market for its goods is generally greater than marginal costs; profits can be obtained. This allows companies to build up organizational slack (Cyert and March, 1963; Staehle, 1991). From the point of view of owners and top managers, it is now important that, metaphorically speaking, this 'slack' is not deposited as fat, but that muscles are built up to further increase the 'fighting strength' of the company. Thus, we argue that BM can be regarded as a form of shadow boxing, where the fight is ultimately with an imaginary opponent (March and Sutton, 1997). The general aim of the efforts is to keep employees and the organization in shape. From the point of view of management, this seems to be vital in the face of increasing global competition, which could erode the comparatively favorable competitive situation of the company. The threat of more intense competition in the future thus induces activities to increase the efficiency of the organization. Moreover, as a reaction to increasing shareholder value orientation and the accompanying expectations of future profit, measures to maintain and increase company profits are required.

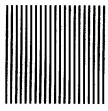
One often discussed option to the above-given situation is the introduction of internal markets in companies. Parts of companies should be organized as profit centers, and the internal exchange of products and services should be coordinated not by formal structures, but by price. It is, however, often difficult to achieve price and quality competition properly or without risk to the company (Eccles, 1985; Eccles and White, 1988). BM offers a relatively easy solution to this problem. With BM, price and quality competition can be emulated in all parts of the company, even in those in which competition is either not directly perceptible or where internal markets cannot be introduced.

A typical example, often quoted in the literature in order to illustrate this problem, is the R&D department, which researches ambitiously, but has a passion for details, and thus unfortunately often researches for far too long. BM proves very useful in increasing efficiency in such areas of a company. It offers a method to generate competition regarding, for example, the speed of development processes in the R&D department. The general advantage of BM, however, is its flexibility. As it does not make any statements regarding organization (for example, division of labor or configuration), but rather simply prescribes a method, the perception of those targeted can be flexibly directed by management towards the central problems. Through comparison with the data of other companies, however they are obtained, and the establishment of new standards in the company, the incentive to increase the efficiency of the company is created. Competition, otherwise hardly perceptible, but of significant importance for employee motivation and their willingness to change, can be brought back into those areas of companies which are not normally directly affected by price and quality competition. And this competition is advantageous to both the benchmarking and the benchmarked company:

> Benchmarking forces a continual focus on the external environment. It also forces that focus at all levels of the organization. (Camp, 1989b: 31)

However, even if BM is in our opinion only a form of shadow boxing, there is a clear winner in the fight. The winners are those companies that are regarded as being the best possible benchmark for others in their 'weight class', and with whose structure and management a comparison thus seems desirable. The company that sets the standards is seen as being the most modern, the best organized, the one with the best processes and structures. It is simply the standard for efficiency. This also leads to important advantages in the 'real' market competition for goods and services. Nothing is more advantageous than being regarded by other companies, and especially competitors, as 'Number 1' in an industry.

Thus, on the one hand, price and quality competition are once again emulated through BM. On the other hand, the best company, i.e. that company with which all others want to perform a BM, attains advantages on the market for goods and services from this competition, which



compared to price competition has only few risks. These advantages are achieved mainly when the reputation of the company attained through BM is a criterion in the customer's purchasing decision. In certain circumstances, it may even replace the extensive, product-related search for information and subsequent analysis, as well as the comparison of prices, as a 'simple' hallmark. The last aspect seems all the more probable the more complex a company's products are, and thus the more difficult an extensive product comparison is. With the increasing complexity of goods, it becomes more and more difficult for the buyer to conduct a reliable value-for-money comparison of the offers of the various producers.

Seen in this manner, BM takes its place in a series of recent management concepts, in which comparison and competition with other companies is central, not so much regarding the price and/or quality of the produced goods, but rather regarding alternative criteria (see, with respect to ISO 9000 certification and quality awards, Walgenbach, 1998, 2000):

- Which company will be the first in an industry or region to boast an ISO 9000 or ISO 14000 certificate?
- Which company will win the European Quality Award (EQA)?
- Which company will obtain the most points of the potential 1000 points of EFQM's quality management model?
- Which company counts as a benchmark?

Conclusion

The starting point of our paper was the current discussion in academia that the inflation of new management concepts in the preceding years should be seen as 'management fashions', which come and go (Abrahamson, 1996) and which often remain decoupled from the technical core of organizations (Kieser, 1997). We argued that this discussion of 'management fashions' and the studies within this perspective appear to be too narrow. A systematic analysis of the contents of a new management concept, as well as a systematic comparison of old and new approaches, is rarely undertaken. The possibility that old concepts with some innovative elements might be sold under a new label, and thus the possibility that new concepts should be better regarded as a continuation and development of old approaches, is excluded. Furthermore, the possibility that new management concepts might, despite some obvious logical inconsistencies and elements, initially seeming to lack rationality, have other functions for managerial practice than those which are found in the general rhetoric, is also not taken into consideration. To avoid a partial view, we argued that the discussion of 'management fashions' requires an analysis of their contents, and a comparison of new and old approaches. We used BM as an example to demonstrate what form such an analysis could take. To us, BM seemed especially suited to such an analysis

because on the one hand, it is currently spreading rapidly and could, therefore, be a 'management fashion' on the upswing. On the other hand, it has several logical inconsistencies that suggest that claim and reality are far apart and that BM is, therefore, used by companies primarily to become legitimate in institutional environments.

Our analysis of BM was based on Max Weber's (1968) understanding of sociology as an interpretive science. In our opinion, this approach is particularly suited to ascertain the contents and aims of management concepts, both overt and covert. We support Weber's view that every artifact can only be understood 'in terms of the meaning which its production and uses have had or were intended to have' (Weber, 1968: 7). Without the meaning, or the role, either as a means or as an end, which management attaches to management concepts, these approaches remain unintelligible. The attempt to deduce the meaning requires that each aspect of a 'management fashion' be explained even if these seem irrational or illogical. This is because management concepts such as BM can be very efficient within the 'logic of practice' even if they seem to be inconsistent and contradictory (Bourdieu, 1994). Therefore, in order to understand a 'management fashion', we argued that it is necessary to consider the latent functions of the concept as well.

In our analysis, we showed that BM can be regarded in certain respects as a continuation of scientific management. BM, on the one hand, shares some striking similarities with scientific management. First, it is based on the same ideology of efficiency, of the company tapping the knowledge of employees, of standardization and quantifying as taken-for-granted values and guidelines for action. Second, it makes use of the same methodology. Systematic, but not (necessarily) valid comparisons are used to set new standards of performance and thus to increase the efficiency of the organization. Actually, it can be said that the content of BM is comparison with the incomparable. However, as long as BM is accepted as a plausible and rational tool by those at whom it is targeted, it can be used to emulate competition with an imaginary opponent. BM is, therefore, like shadow boxing. Management can use it to create or increase the impression of competition in those parts of the company in which price and quality competition is rarely or only indirectly felt. Competition between companies is also extended to another dimension through BM. Being regarded as a benchmark means that a company with 'best practices' increases the competitive situation of the company because of the resulting improvement in its reputation. As a whole, BM increases the presence of competition in and between companies, and thus further encourages the penetration of the dominant ideology of western economic systems into companies.

Despite these important similarities, there are essential differences between BM and scientific management. BM is free of any specific organizational concept, making it a flexible tool that can be adapted to

the specific needs of management. Furthermore, it does not target only workers and foremen, but also middle and senior management.

Thus, our discussion has revealed that an analysis of the contents of new management concepts is helpful in understanding 'management fashions'. It aids in judging whether a 'fashion' is actually a new and original concept or whether it should better be regarded as a continuation of old approaches. In addition, our analysis revealed that new management concepts might make claims that are not grounded in any demonstrable 'truth', for example, the myth of comparability in BM; nevertheless, they may have latent or covert functions. Uncovering these latent functions helps to assess what the utilities of the 'fashion' are and to assess whether it remains decoupled from the work activities of organizations and thus serves only as a means to legitimize the organization.

Max Weber's understanding of sociology (1968) has proven very fruitful in our analysis. In our opinion, this approach is generally suitable for analyzing the contents of 'management fashions' because it focuses on the meaning of social action. However, further and in particular empirical studies are needed in order to assess whether this form of analysis can effectively ascertain the meaning of individual 'management fashions'.

Notes

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1 German quotations were translated by the authors.

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Entscheidungsfindung in Reorganisationsprozessen[1]

Analyse eines Fallbeispiels aus dem Transportsektor anhand des Garbage-Can-Modells

Die Entscheidungsfindung in Reorganisationsprozessen erscheint in der Praxis häufig als unübersichtlich und unstrukturiert. Rationale Entscheidungstheorien liefern dafür keine zufriedenstellende Erklärung. Welche Charakteristika kennzeichnen Reorganisationsprozesse, und wie läßt sich die Entscheidungsfindung angemessen beschreiben? Der vorliegende Beitrag geht diesen Fragen nach. Dazu wird zunächst eine Reorganisation im Verwaltungsbereich eines Unternehmens aus dem Transportsektor vorgestellt. Anschließend soll überprüft werden, inwieweit das Garbage Can-Modell passend und dienlich für die Beschreibung der Entscheidungsfindung in Reorganisationsprozessen ist. Dem schließt sich eine Diskussion der Repräsentativität, der Konsequenzen und des Umgangs mit Garbage Can-Prozessen für Reorganisationen an.

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Reorganisationen

Reorganisationen sind intendiert initiierte Änderungen von Organisationen. Sie werden in der Praxis in beträchtlichem Umfang durchgeführt, um eine Anpassung an eine veränderte Unternehmensumwelt zu erreichen.[1] Unter die umfassende Neugestaltung einer Organisation im Rahmen einer Reorganisation fallen etwa Übergänge von funktionalen zu divisionalen Organisationsstrukturen, die Einrichtung von Centerstrukturen (etwa Cost oder Profit Center), die Zusammenfassung von Abteilungen zu größeren Einheiten bzw. die Bildung kleinerer Einheiten, Zentralisierung bzw. Dezentralisierung bestimmter Aufgaben oder Einheiten, Restrukturierungen des Gemeinkostenbereichs oder der Übergang zur Gruppenarbeit.[3] Es gibt ein breites Spektrum an Konzepten wie bspw. Reengineering, TQM oder Lean Management, die Grundideen und Leitfäden zur Durchführung von Reorganisationen beinhalten. In diesen Konzepten wird zunächst meist die Aufmerksamkeit auf eine oder mehrere Schwachstellen der bisherigen Organisationspraxis gerichtet bzw. auf bestimmte, bisher vernachlässigte Aspekte hingewiesen, um dann ein schrittweises Vorgehen zur Behebung dieser Defizite aufzuzeigen.[4]

Die Suggestion einer rezeptartigen Machbarkeit und die Einfachheit der normativen Beschreibung der Durchführung von Reorganisationen decken sich jedoch nur wenig mit den praktischen Erfahrungen von Managern und Mitarbeitern, die Reorganisationsprozesse als unübersichtlich, komplex und oft als unberechenbar erleben. Nicht zuletzt deutet eine nicht unerhebliche Quote von gescheiterten Reorganisationen[5] darauf hin, daß sich Entscheidungsprozesse in Reorganisationen einer normativ rationalen Gestaltung entziehen können.

Damit stellt sich jedoch die Frage, ob und wie man Reorganisationsprozesse adäquat beschreiben kann: Muß man vor der vermeintlichen Unberechenbarkeit von Reorganisationen kapitulieren oder lassen sich auch in den scheinbar wenig rationalen Abläufen Strukturen finden? Und wenn es solche Strukturen oder Muster gibt, wie sollte man mit ihnen umgehen? Diesen Fragen soll im folgenden nachgegangen werden.

Die Reorganisation des Verwaltungsbereichs eines Unternehmens aus dem Transportsektor

Beschreibung des untersuchten Projekts

Von Januar bis September 1994 wurde in einem Unternehmen aus dem Fracht- und Transportsektor ein Reorganisationsprozeß des Verwaltungsbereiches beobachtet. Das Reorganisationsprojekt war das Ergebnis eines im Vorjahr im Unternehmen durchgeführten Strategie-Workshops, bei dem eine Stärken-Schwächen-Analyse aus Sicht der Kunden auf ein erhebliches Verbesserungspotential im Frachtbereich des Unternehmens hindeutete. Als Ergebnis dieses Strategie-Workshops wurde eine Reihe von Teilprojekten in den unterschiedlichen Abteilungen des Unternehmensbereichs unter dem Thema »Zentralisierung vs. Dezentralisierung« initiiert. Im Bereich der Reservierung, auf den das Hauptaugenmerk der Untersuchung gerichtet war, ging es konkret um die Frage des Übergangs von mehreren dezentralen, regionalen Reservierungsbüros hin zu einer zentralen Struktur der Transportreservierung sowie die Problematik der telefonischen Erreichbarkeit, deren Einschränkung Auftragsverluste für kurzfristige Transporte bedeutete. Ursprünglich sollte von seiten des Lehrstuhls eine Untersuchung der Vor- und Nachteile von Zentralisierung bzw. Dezentralisierung im Frachtbereich durchgeführt werden. Die Untersuchung dieser Sachproblematik konnte zügig abgehandelt werden, so daß vereinbart wurde, den eigentlichen Ablauf der Reorganisation mitzuverfolgen, was den am Entscheidungsprozeß beteiligten Mitarbeitern ex ante nicht mitgeteilt wurde, um Verzerrungen in der Untersuchungsphase zu vermeiden. Die Untersuchung des Entscheidungsprozesses beinhaltete nun eine Analyse der schriftlichen Unterlagen aus den vor-

ausgegangenen Strategie-Workshops, die zur Initiierung des Reorganisationsprojekts geführt hatten, sowie die Beobachtung und Protokollierung der durchgeführten Projektsitzungen und deren Ergebnisse. Weiterhin wurden persönliche Gespräche mit betroffenen Mitarbeitern aus der Abteilung Reservierung sowie mit Mitarbeitern aus den Regionalbüros geführt und deren Tätigkeiten durch jeweils mehrtägige Mitarbeit an den Arbeitsplätzen beobachtet.

Verlauf des Reorganisationsprozesses[6]

Im folgenden soll nun eine kurze Verlaufsskizze des Reorganisationsprozesses im Bereich Reservierung gegeben werden, beginnend mit dem Projektvorschlag des Strategie-Workshops, dem Vorbereitungsmeeting, dann das Kick-off-Meeting und schließlich 4 weitere Projektsitzungen. Das Hauptaugenmerk gilt dabei den Teilnehmern, der Problem- und Zieldiskussion, den Lösungsvorschlägen und der Art der Entscheidungsfindung.

Strategie-Workshop 1993: Als Ergebnis des Workshops wurde ein Reorganisationsprojekt »Zentralisierung versus Dezentralisierung« initiiert, das in der 2. Kalenderwoche 1994 beginnen sollte. Projektleiter und eine Sollbesetzung des Teams wurden bestimmt. 14-tägige Projektmeetings sollten sich der Probleme bzw. Ziele der Verbesserung der telefonischen Erreichbarkeit, Nutzung der Synergien durch Zentralisierung und Abdeckung der Bedarfsspitzen durch Optimierung des Personaleinsatzes annehmen.

Vorbereitungsmeeting: Anfang Februar 1994 trafen sich die nach dem Maßnahmenkatalog verantwortlichen Abteilungsleiter beim Koordinator des Gesamtprojekts. Die Projektleitung für das Teilprojekt Reservierung wurde aufgrund der Arbeitsüberlastung des Koordinators einem Projektteammitglied, dem Service-Manager, der erst relativ kurz in seiner Position war, übertragen. Eine Projektdauer von Ende Februar bis Ende Mai 1994 wurde anvisiert.

Kick-off-Meeting: Wegen zeitlicher Überlastung des Service-Managers, des Projektleiters, durch das Tagesgeschäft fand das eigentliche Kick-off-Meeting erst Ende April statt. Das Interesse war groß: Neben den vorgesehenen Teilnehmern war noch ein Regionalbereichsleiter, der zur 2. Führungsebene zu rechnen ist, anwesend; der Koordinator des Gesamtprojekts ließ sich entschuldigen. Die Ziele des Projekts wurden sehr kontrovers diskutiert. Der Regionalbereichsleiter erwartete neben den konkreten operativen Zielen eine allgemeine Optimierung der Arbeitsabläufe, Ausnutzung der Kostensenkungspotentiale und zog eine Verbindung zur Bildung einer schlankeren Unternehmung. Die Lösung weitgehend aller Probleme wurde in der Ausnutzung von Synergien durch eine Zentralisierung gesehen, die in einem anderen Bereich des Unternehmens bereits erfolgreich vollzogen worden war. Die Projektteilnehmer brachten darüberhinaus je nach ihrer Abteilungszugehörigkeit eine Vielzahl von Einzelproblemen zur Sprache, von der unzureichenden technischen Ausstattung bis hin zu Kommunikationsproblemen mit anderen Bereichen.

2. Meeting, Anfang Mai: Da das Kick-off-Meeting relativ offen endete, waren keine konkreten Vorarbeiten bzw. Vorbereitungen für das 2. Meeting ausgeführt worden. Neben dem Projektleiter und vier Teilnehmern des Kick-off-Meetings waren auf Vorschlag eines Teilnehmers zwei Mitarbeiter hinzugekommen, insbesondere der Leiter des zentralen Kundendienstes, der einen starken Einfluß auf das Projekt nehmen sollte. Zwei andere Teilnehmer zeigten kein Interesse mehr an dem Projekt. Ein weiterer Teilnehmer aus der Außenstelle sowie der Koordinator des Gesamtprojekts konnten aus zeitlichen Gründen ebenfalls weder an dieser noch an einer weiteren Sitzung mehr teilnehmen. Die Diskussion drehte sich in weiten Teilen erneut um die Problemstellung, die Aufgaben und die Ziele des Projekts. Die zum ersten Mal anwesenden Teilnehmer brachten neue Fragestellungen ein, die aber nicht weiter verfolgt wurden. Vielmehr konzentrierte sich die Diskussion schließlich wegen der personellen Überzahl der Mitarbeiter aus der Zentrale zunehmend auf die Probleme der Zentrale. Man hielt es für notwendig, Tätigkeitsanalysen aus dem EDV-Bereich in die Untersuchung miteinzubeziehen. Weiterhin sollte eine detaillierte Aufgabenanalyse der Buchungstätigkeit angefertigt sowie eine Schnittstellenanalyse zu anderen Bereichen durchgeführt werden.

3. Meeting, Mitte Mai: Der zentrale Kundendienst hatte für die Sitzung ein Ablaufdiagramm einer Standardreservierung erstellt. Die Mitarbeiter der Reservierung selbst hatten einen Entwurf einer ergonomischeren Informationsmaske ausgearbeitet. Die Schnittstellenanalyse mit anderen Bereichen lag allerdings nicht vor. An diesem dritten Meeting nahmen neben dem Projektleiter nur der Leiter des zentralen Kundendienstes und ein Mitarbeiter einer Aussenstelle teil. Es hatte sich gezeigt, daß die Probleme des Bereichs Reservierung ablauforganisatorischer Natur waren, so daß eine aufbauorganisatorische Veränderung in Richtung Zentralisierung im vorliegenden Fall keine Lösung der konstatierten Probleme bringen konnte. Einige Mitarbeiter wollten deshalb erst wieder an den Abschlußsitzungen teilnehmen, da sie sich für die Diskussion um Buchungsabläufe nicht für zuständig hielten. Andere wie die zentrale Verkaufsabwicklung zeigten gar kein Interesse mehr. Aufgrund der Zusammensetzung der anwesenden Projektteilnehmer richtete sich die Aufmerksamkeit unweigerlich auf die Vereinfachung der Buchungstätigkeit. Dabei wurden einzelne Ausschnitte bis ins kleinste Detail diskutiert und Partiallösungen für spezielle Probleme gesucht. Ohne konkrete Ergebnisse vereinbarte man den nächsten Sitzungstermin.

4. Meeting, Mitte Juni: Bis auf den Projektleiter und den Leiter des zentralen Kundendienstes ließen sich alle anderen Projektteilnehmer aus zeitlichen oder gesundheitlichen Gründen entschuldigen. Gegenstand des Meetings war die Vorbereitung und Erarbeitung möglicher endgültiger Lösungsvorschläge. Da als Vertreter der betroffenen Bereiche nur der Leiter des zentralen Kundendienstes anwesend war, wurden seine Interessen berücksichtigt. Die auf Folien festgehaltenen Vorschläge enthielten eine ganze Reihe Verbesserungen in der Nutzung technischer Möglichkeiten wie bspw. Schaltung von Überlaufleitungen.

5. Meeting, Mitte Juli: An diesem letzten Meeting nahmen neben dem Projektleiter der Leiter des zentralen Kundendienstes sowie ein Mitarbeiter der Kapazitätssteuerung teil. Diskussionsgegenstand waren die im vorhergehenden Meeting ausgearbeiteten Lösungen, wobei man sich weitgehend auf die Übernahme der Vorschläge beschränkte. Je eingehender man sich mit einzelnen Details der Abläufe beschäftigte, desto häufiger traten während der Diskussion neue Probleme und Fragen auf. Diese wurden jedoch, um zu einer Lösung zu kommen, nicht weiter verfolgt. Der Mitarbeiter der Kapazitätssteuerung konnte noch beitragen, daß einige bearbeitungsaufwendige Spezial-Codes wegfallen werden. Weiterhin wurde beschlossen, den Ausbau der bestehenden Software-Unterstützung anzustreben sowie einige konkrete, vorher ausgearbeitete Vorschläge zur Verbesserung der Anwenderfreundlichkeit der Benutzeroberflächen an die verantwortlichen Stellen weiterzuleiten. Der Projektleiter wurde mit der Ausarbeitung eines Aktionsplans beauftragt.

Diese kurze Beschreibung des Verlaufs des Reorganisationsprojekts illustriert m.E. die in der Einleitung skizzierte Unübersichtlichkeit und die aus rationaler Sicht gewisse Unstrukturiertheit des Reorganisationsprozesses recht anschaulich. Im folgenden Kapitel soll nun das Garbage Can-Modell vorgestellt werden, um anschließend zu untersuchen, inwieweit sich die beschriebenen Abläufe anhand dieses Modells erklären lassen.

Das Garbage Can-Modell

Das Garbage Can-Modell ist dem Bereich der verhaltenswissenschaftlichen Entscheidungstheorie zuzuordnen[7] und wurde von Cohen, March und Olsen[8] zur Beschreibung von Entscheidungsprozessen entwickelt. Es geht vor allem von einer begrenzten Rationalität der Akteure aus[9], deren eingeschränkte kognitive Kapazitäten angesichts einer komplexen und unsicheren Umwelt der Organisation ein vollständig rationales Verhalten ausschließen. Entscheidungssituationen in Organisationen sind von Mehrdeutigkeit oder Unklarheit *(»ambiguity«)* gekennzeichnet.[10] Diese Mehrdeutigkeit der Entscheidungssituation ergibt sich nach Meinung der Autoren des Garbage Can-Modells, wenn drei Bedingungen je einzeln oder gemeinsam als Kennzeichen und Voraussetzung eines Entscheidungsprozesses erfüllt sind:

(1) Inkonsistente und unoperationale Ziele: Ziele sind nicht eindeutig definiert und nicht konsistent zueinander. Bedeutung und Inhalt variieren zwischen den Akteuren, werden nachträglich angepaßt oder entstehen erst im Prozeßverlauf.

(2) Beschränktes Wissen und unklare Technologien: Organisationen existieren und »funktionieren«, ohne daß die Mitglieder die entscheidungs- und erfolgsrelevanten Kausalbeziehungen unbedingt verstehen. Das Wissen über Maßnahmen und Entscheidungen, die Ergebnissen von Handlungen zugrundeliegen, ist beschränkt und läßt sich ex post oft nicht als ein logisch rational intendierter Ursache-Wirkungsmechanismus beschreiben, sondern nur als ein Residuum zufälliger Erfahrungen und aus der Not geborener pragmatischer Handlungen.

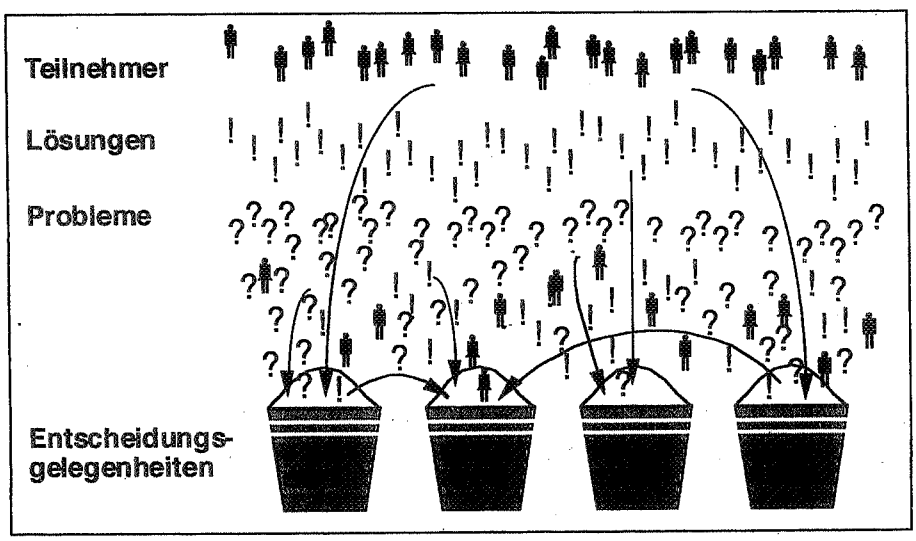
(3) Wechselnde Teilnehmer und Aufmerksamkeit: Teilnehmer an Entscheidungsprozessen kommen und gehen. Häufig nehmen Mitarbeiter in Organisationen an mehreren Entscheidungsprozessen gleichzeitig teil und verwenden für diese unterschiedliche Energie und Zeit entsprechend ihrer persönlichen Präferenzen und Prioritäten. Die Zusammensetzung einer Entscheidungsgruppe und die Aufmerksamkeit der Teilnehmer bleiben damit im zeitlichen Verlauf nicht konstant.

Vor dem Hintergrund dieser Annahmen liegen das wesentliche Kennzeichen und der Erkenntnisschritt des Garbage Can-Modells darin, die Elemente eines Entscheidungsprozesses nicht mehr als sukzessive Schritte eines festgefügten Schemas[11] zu betrachten, sondern als voneinander (relativ) unabhängige Ströme, deren überwiegend nicht vorherbestimmbares Zusammentreffen letztlich Verlauf und Ergebnis von Entscheidungsprozessen beeinflußt.

Elemente des Entscheidungsprozesses sind (1) *die Probleme*, die in den Entscheidungsprozeß eingebracht werden und sich neben konkreten operativen Problemen der Organisation auch über alle erdenklichen Lebens- und Arbeitsbereiche der Teilnehmer am Entscheidungsprozeß erstrecken können; (2) *die Lösungen*, die nicht nur unbedingt Antworten auf vorliegende Probleme sein müssen, sondern schon vor den Problemen existent sein können und quasi als Angebot auf passende Probleme warten; (3) *die Teilnehmer*, deren Zahl und Zusammensetzung im Verlauf des Entscheidungsprozesses variieren und deren Aufmerksamkeit stark von dem persönlichen Interesse und dem Grad der Involvierung in andere Entscheidungsprozesse abhängt; und schließlich (4) *die Entscheidungsgelegenheit*. Darunter sind Anlässe in Organisationen wie etwa Vertragsabschlüsse, Budgetmeetings, Sitzungen von Gremien u. ä. etwa auch im Rahmen von Reorganisationen zu verstehen. Entscheidungsgelegenheiten bieten nicht nur Raum für die Lösung bestimmter Probleme, sondern stellen auch Arenen dar, in denen Machtpositionen gefestigt, alte Rechnungen beglichen werden und sich demnach eine Vielzahl von Problemen, Lösungen und Teilnehmern anlagern können, die mit dem ursprünglichen Anlaß der Entscheidung nicht viel zu tun haben. »Decisions are a stage for many dramas«[12]. Abb. 1 stellt diesen Zusammenhang graphisch dar.

Betrachtet man die Elemente eines Entscheidungsprozesses als weitgehend voneinander unabhängige Ströme, so lassen sich Situationen in Organisationen erklären, in denen Probleme deshalb nicht gelöst werden, weil sie auf keine passende Entscheidungsgelegenheit treffen oder kein Entscheidungsteilnehmer sich ihrer annimmt. Andererseits wird es auch anschaulich, daß bestimmte Entscheidungen nicht getroffen werden, weil in eine Entscheidungsgelegenheit - einen Mülleimer - zu viele Probleme hineingeworfen werden, die sich gegenseitig blockieren. Erst nachdem bestimmte Teilnehmer oder Probleme zu anderen Entscheidungsgelegenheiten abgewandert sind, können dann Entscheidungen fallen. Aus obiger Darstellung ist es auch einsichtig, daß bestimmte Lösungen möglicherweise schon vor konkreten Problemen existieren und sozusagen nach Problemen suchen, auf die sie angewendet werden können. Als Beispiel hierfür kann etwa die Bereitstellung einer EDV-Infrastruktur angeführt werden, bei deren Aufbau die genauen Verwendungszwecke oft noch gar nicht genau spezifiziert sind.

Abb. 1: *Das Garbage Can-Modell*



Um diese Abläufe in Entscheidungsprozessen zu beschreiben, unterscheidet das Garbage Can-Modell drei »Entscheidungsstile«:

(1) *Entscheidung durch Problemlösung:* Dieser vor allem in der klassischen Entscheidungstheorie modellierte Fall einer umfassenden Lösung eines Problems tritt auch in Garbage Can-Prozessen auf, wobei die Autoren ihn als weniger häufig vorkommend einschätzen als die beiden folgenden.

(2) *Entscheidung durch Übersehen* (»by oversight«): Die Bezeichnung dieses Entscheidungsstils mit "Übersehen" ist ein Beispiel für die leider nicht ganz glückliche und zu Mißverständnissen neigende Begriffswahl der Autoren. Hier wird eine Entscheidung zügig getroffen, bevor andere Probleme sich an die Entscheidungsgelegenheit anheften und anstehende Entscheidungen möglicherweise blockieren. Eine Führungsposition kann beispielsweise mit einem männlichen Bewerber besetzt werden, wenn die Problematik der Gleichbehandlung von Frauen noch bei der Entscheidung über eine Gleichbezahlung der bereits im Unternehmen angestellten Mitarbeiterinnen verweilt.[13] Mißverständlich ist die Bezeichnung deshalb, weil einerseits auch dieser Entscheidungsstil eine Problemlösung beinhaltet, wenngleich weniger umfassend und unter anderen Bedingungen als in (1), und andererseits es ja eigentlich die Probleme bzw. deren Protagonisten sind, die die gegebene Entscheidungsgelegenheit »übersehen«.

Der dritte Entscheidungsstil wird mit (3) *Entscheidung durch Flucht* (»by flight«) bezeichnet. Darunter werden solche Situationen gefaßt, in denen über einen mehr oder weniger langen Zeitraum vergeblich versucht wurde, zu einer Entscheidung zu kommen. Erst nach dem Abwandern – der Flucht – bestimmter Probleme, Teilnehmer oder seltener auch Lösungen zu anderen Entscheidungsgelegenheiten wird es möglich, eine Entscheidung zu treffen. Eine lange Zeit strittige Entscheidung über eine neue Arbeitszeitregelung kann zügig gefällt werden, nachdem das Problem der Frauenemanzipation in diesem Zusammenhang nicht mehr zur Sprache kommt, sondern entmutigt zur Entscheidung über die Einführung von Betriebskindergärten »geflohen« ist. Die drei Entscheidungsstile können auch zusammen in einem Entscheidungsprozeß auftreten.

Die Autoren erheben nicht den Anspruch, mit dem Garbage Can-Modell alle Entscheidungsprozesse in Organisationen beschreiben zu wollen. In Situationen, in denen allerdings die Bedingungen für eine Mehrdeutigkeit erfüllt sind, erwarten sie ihrem Modell entsprechend ablaufende Prozesse. Die Besonderheit des Konzepts liegt in der Betonung der Kontext- und Zeitabhängigkeit der Entscheidungen, die von den Konstellationen der Entscheidungsgelegenheiten, Problemen, Lösungen und Teilnehmern abhängen. Das Zusammentreffen dieser Elemente wird jedoch nicht als rein zufällig angesehen, sondern als durch die Organisationsstruktur und die soziale Struktur der Organisation beeinflußt, die etwa die Zugangsrechte zu Entscheidungsgelegenheiten, bspw. die Zugehörigkeit zu einem Entscheidungsgremium, bestimmt.

Analyse des Reorganisationsprozesses aus Sicht des Garbage Can-Modells

Die obige Schilderung des Verlaufs der Reorganisation läßt einige Bezüge zum Garbage Can-Modell erkennen. Betrachten wir zunächst die im Modell formulierten Annahmen und Voraussetzungen der Mehrdeutigkeit:

Auffälliges Merkmal des Projektverlaufs ist tatsächlich die hohe *Fluktuation der Teilnehmer.* In keiner Sitzung gab es die gleiche Besetzung. Die Zahl der Teilnehmer schwankte zwischen 9 (Kick-off-Meeting) und 2 (4. Projektmeeting) ebenso wie die Zusammensetzung von seiten der Abteilungszugehörigkeit. Gründe für die wechselnde Teilnahme lagen vor allem in der inhaltlichen Entwicklung des Projekts, weshalb sich einige Teilnehmer nicht mehr für zuständig hielten oder kein Interesse mehr zeigten. Das läßt sich auch daran erkennen, daß eine ganze Reihe Mitarbeiter nur ein einziges Mal an einer Sitzung teilnahmen und dann offenbar ihre Entscheidung gegen eine weitere Teilnahme trafen, da sie keine Möglichkeit zur Einbringung ihrer Interessen sahen. Die persönliche und zeitliche Überanspruchung rangierte ebenfalls als wichtige Entschuldigung für die Nichtteilnahme, wobei man diese Erklärung in nicht wenigen Fällen als vorgeschoben und das Nichtinteresse als eigentlichen Grund betrachten kann.

Für die *Inkonsistenz und schwierige Operationalisierbarkeit der Ziele* läßt sich einige Evidenz finden. Es sind vor allem die sehr allgemein formulierten Ziele der Nutzung von Synergien einer Zentralisierungslösung, der Optimierung des Personaleinsatzes sowie generelle Kostensenkungsziele, die sich zunächst einer konkreten Operationalisierung entziehen. Die offene Zielvorgabe führte bei den Teilnehmern zu Unsicherheit und als Folge davon zu andauernden Diskussionen über die eigentlichen Ziele und Aufgaben des Projekts. Die Mehrdeutigkeit der Ziele wurde zusätzlich noch gefördert durch das von dem Bereichsleiter vorgebrachte Ziel der Realisierung einer schlanken Organisation. In diesem plakativen Modebegriff manifestiert sich ein anderer Aspekt, den die Autoren des Garbage Can-Modells ebenfalls als symptomatisch identifizieren: Schlagworte sind häufig wichtiger als Stichhaltiges.[15] Die Veränderlichkeit der Ziele nicht nur zwischen den Teilnehmern, sondern auch im Verlauf des Entscheidungsprozesses zeigt sich deutlich darin, daß nach Wegfall des Ziels der Zentralisierung neue Ziele in der Vereinfachung der Buchungsvorgänge und Verbesserung der EDV-Tätigkeiten gefunden wurden.

Das *beschränkte Wissen um die erfolgsrelevanten Kausalbeziehungen* läßt sich an dem Versuch der Durchsetzung einer Zentralisierungslösung, die in einem anderen Unternehmensbereich erfolgreich eingeführt worden war, erkennen. Die genauen Zusammenhänge über den Erfolg im anderen Unternehmensbereich waren nicht bekannt, denn erst nach einer längeren Auseinandersetzung mit dieser Frage wurde die Zentralisierungslösung aufgrund der Andersartigkeit der vorliegenden Reservierungsaufgabe verworfen, obwohl sie zu Projektbeginn fast unwidersprochen als *die* Lösung aller anstehenden Probleme galt.

Betrachtet man die von den Autoren genannten Elemente eines Entscheidungsprozesses genauer, so ergeben sich weitere interessante Merkmale eines Garbage Can-Prozesses.

Die *Probleme,* die von den Teilnehmern in die Entscheidungsarena hineingetragen wurden, waren vielfältig, variierten je nach Betroffenheit zwischen den Teilnehmern und änderten sich im Projektverlauf. Das Spektrum der eingebrachten Probleme erstreckte sich von Schwierigkeiten im Ablauf der Buchungsbearbeitung über Arbeitsüberlastung, Konflikte mit anderen Abteilungen, schlechter technischer und personeller Ausstattung bis hin zu überhöhten Personalkosten. Es zeigte sich, daß diese Entscheidungsgelegenheit – das Reorganisationsprojekt – sich zu einem ›Mülleimer‹ entwickelte, in dem die Teilnehmer all das an Problemen abladen konnten, wozu sie sonst keine Gelegenheit hatten. Allerdings wanderten die Probleme meist auch recht bald wieder mit den sie vertretenden Mitarbeitern ab, wohl auch

deshalb, weil diese in der vorliegenden Entscheidungsgelegenheit keine konkrete Chance zur Umsetzung und Lösung ihrer Probleme sahen.

Die *Lösungen* des betrachteten Entscheidungsprozesses waren keineswegs durchgehend wie im Rationalmodell Ergebnis der Beschäftigung mit aufgeworfenen Problemen. Vielmehr zeigt sich am Beispiel der Zentralisierungslösung, daß sie teilweise bereits vor den Problemen existierten und quasi nur ein passendes Problem suchten, auf das sie angewendet werden konnten. Auch die vorgebrachte Forderung nach Umsetzung einer schlanken Organisation stellt im Grunde nichts anderes als ein organisationsstrukturelles Konzept dar, das vom Bereichsleiter als probate Lösung für die im Reorganisationsprojekt anstehenden Probleme angesehen wurde, ohne dabei Genaueres über die Wirkungszusammenhänge und die Anwendbarkeit des Konzepts zu wissen. Aufgrund der mangelnden Operationalisierbarkeit dieser Forderung und der Nichtbeteiligung des Bereichsleiters im weiteren Projektverlauf wurde diese Lösung außer im Kick-off-Meeting nicht wieder aufgegriffen.

Auf die *Teilnehmer* und deren wechselnde Aufmerksamkeit für das Projekt wurde oben zum Thema Mehrdeutigkeit schon kurz eingegangen. Jedenfalls hing die Teilnahme am Projekt in hohem Maße von der sonstigen Arbeitsbelastung der Mitarbeiter sowie deren Einschätzung der Möglichkeit der Durchsetzung eigener Interessen ab. Entscheidungen über konkrete Reorganisationsmaßnahmen konnten jedenfalls erst getroffen werden, als die Teilnehmer mit divergierenden Interessen schließlich die Projektarena verlassen hatten.

Die *Entscheidungsgelegenheit* entwickelte sich tatsächlich als ein Forum, in das die Teilnehmer unterschiedlichste Wünsche und Erwartungen, Probleme und Lösungen einbrachten.

Implikationen und Optionen für den Umgang mit Garbage Can-Prozessen

Repräsentativität von Garbage Can-Prozessen

Vor der Diskussion des Umgangs mit Garbage Can-Prozessen steht die Frage nach der Repräsentativität derartiger Abläufe. Stellt das beschriebene Fallbeispiel einen extremen Einzelfall dar oder sind die im Garbage Can-Modell vorgezeichneten Prozesse eher die Regel? Empirische Untersuchungen, die Entscheidungsprozesse konkret aus der Perspektive des Garbarge Can-Modells analysieren, sind dünn gesät und konzentrierten sich vorwiegend auf den Bereich von Hochschulen und öffentlicher Verwaltung.[15] Die Übertragbarkeit dieser bisherigen empirischen Ergebnisse wurde bezweifelt.[12] In der Literatur und empirischen Forschung zu Entscheidungsprozessen ergibt sich darüberhinaus kein einheitliches Bild. Hickson et al. sehen Garbage Can-Prozesse nach einer intensiven Feldanalyse von 150 Entscheidungsprozessen eher als Ausnahme an. Allerdings treffen für eine große Zahl der von ihnen untersuchten strategischen Entscheidungen auch nicht die im Modell formulierten Bedingungen für Mehrdeutigkeit zu. Sie geben jedoch selbst zu: »Some decision-making on some topics, such as *reorganizations* (Hervorh. A.K.) ... may be more garbage-can-like more often, ...«.[12] In einer Untersuchung von 78 Entscheidungsprozessen mittels Interviews ordnete Nutt immerhin 35% der Fälle unter die Kategorie Garbage Can-Prozesse ein.[18] Heller et al. finden in ihrer empirischen Analyse von 240 Entscheidungen in sieben Organisationen in drei Ländern keine Bestätigung für ein verbreitetes Vorkommen von Garbage Can-Prozessen.[19] Horváth hingegen findet durchaus eine Geltung in Unternehmen.[20]

Bestimmte Elemente von Garbage Can-Prozessen lassen sich jedoch zumindest eindeutig identifizieren: So werden Reorganisationen bspw. etwa in der Praxis selten initiiert, »ohne daß bereits von Anfang an eine generelle Lösungsidee als Initiativkonzept vorliegt«,[21] was die im Garbage Can-Modell formulierte Unabhängigkeit bzw. Präexistenz von Lösungen zu Problemen in gewisser Weise bestätigt. Reorganisationen sind weiterhin durch eine Reihe von Merkmalen gekennzeichnet, die eine bemerkenswerte Kongruenz zu den im Garbage Can-Modell formulierten Faktoren für die Mehrdeutigkeit von Entscheidungssituationen aufweisen:

- *Hoher Problem- und Zeitdruck:* Die Ursache dafür liegt in der meist hohen Bedeutung der Reorganisation für die Organisation. Häufig sind sogar erst Krisen Auslöser für Reorganisationen.[22] Ohne einen fehlenden Problemdruck ist es andererseits auch äußerst schwierig, die Notwendigkeit von tiefgreifenden Änderungen überhaupt zu vermitteln und durchzusetzen.[23]
- *Neuartigkeit:* Reorganisationen bringen das Unternehmen in eine neue Situation, zu der es bisher noch keine Erfahrungen gibt.
- *Interdisziplinarität und Reichweite:* In Reorganisationen ist die Zusammenarbeit von Mitarbeitern aus verschiedensten Aufgabenbereichen und Hierarchiestufen erforderlich. Die Auswirkungen der Umgestaltung sind meistens abteilungsübergreifend, betreffen größere Teilbereiche oder gar die gesamte Organisation.
- *»Politische« Sensibilität:* Reorganisationen verändern Strukturen. Dabei kann es Verlierer und Gewinner, Machtverlust oder Machtgewinn, Unzufriedenheit oder Motivationsschübe geben. Es gibt Förderer bzw. Promotoren und es gibt Opponenten, die die Reorganisation zu verhindern, verzögern oder zumindest in ihren Auswirkungen zu verwässern suchen.

Zusammenfassend läßt sich sagen, daß das Garbage Can-Modell sicherlich kein generelles Modell für Entscheidungsprozesse in Unternehmen darstellt, was übrigens von den Autoren auch gar nicht in Anspruch genommen wird, daß man auf der anderen Seite jedoch davon ausgehen kann, daß dem Modell entsprechende Abläufe durchaus in Unternehmen vorkommen: »And most organizations may be beset at least occasionally with severe ambiguity, especially during periods of crisis or ›value instability‹.«[24] Dabei bieten Reorganisationen als ein Typus von Entscheidungen aufgrund ihrer Charakteristika besondere Anknüpfungspunkte für Abläufe von Prozessen, wie sie das Garbage Can-Modell beschreibt.

Umgang mit Garbage Can-Prozessen

Hinsichtlich der sich aufdrängenden Frage des Umgangs mit solchen Prozessen muß zunächst festgestellt werden, daß das Modell selbst aufgrund seines deskriptiven Charakters keine normativen Handlungsempfehlungen gibt. Auf den ersten Blick erscheinen Garbage Can-Prozesse jedoch als unübersichtlich und wenig erstrebenswert, vielleicht sogar ein Stück weit chaotisch, weshalb ein Vertreter der Rationalmodelle intuitiv eine möglichst weitgehende Vermeidung solcher Prozesse anstreben würde. Ob dies jedoch so einfach möglich und überhaupt zweckmäßig ist und welche Folgen das hätte, läßt sich nicht ohne weiteres beantworten. March unterscheidet drei grundlegende Reaktionstypen:[25] (1) den *Reformer*, der Garbage Can-Elemente so weit wie möglich aus Entscheidungsprozessen eliminieren will, da er diese als schädlich und vermeidbar ansieht; (2) den *Pragmatiker*, der sein Wissen über den Ablauf von Garbage Can-Prozessen im eigenen Interesse

zu nutzen versucht; (3) den *Enthusiasten*, der Garbage Can-Prozesse nicht nur als nicht änderbar hinnimmt und das Beste daraus zu machen sucht, sondern in der Art des Ablaufs von Garbage Can-Prozessen eine neue Vision der Entscheidungsfindung sieht.

Aus der Perspektive des *Reformers* lassen sich einige Anknüpfungspunkte für den Versuch finden, Garbage Can-Prozesse weitgehend zu vermeiden: Voraussetzung für den Ablauf des Entscheidungsprozesses im Sinne des Modells war die Existenz von Mehrdeutigkeit. Eine Vermeidungsstrategie müßte also eine Reduzierung der Mehrdeutigkeit anstreben. Insbesondere wäre dabei auf eine Reduzierung der Fluktuation der Teilnehmer zu achten. Das könnte durch eine verbindlichere Auswahl und Festlegung der Teilnehmer im Vorfeld sowie ei[illegible]Teilnahmepflicht an den Sitzungen im[illegible]jektverlauf erreicht werden. Auch würde eine Reduzierung der Zahl an Entscheidungsgelegenheiten (Projekten) die Möglichkeiten einschränken, Probleme in andere Arenen hineinzutragen. Weiterhin müßte eine Präzisierung der Ziele erfolgen, um unnötige Reibereien durch andauernde Zieldiskussionen wie im vorliegenden Projekt zu vermeiden.

Diese Vorschläge werfen jedoch auch einige Fragen hinsichtlich ihrer Umsetzbarkeit und der Konsequenzen auf: So reduziert eine Verringerung der Zahl an Entscheidungsgelegenheiten zwar die Möglichkeiten des Abwanderns von Teilnehmern respektive Problemen, der Problemdruck und die Belastung für die verbleibenden Entscheidungsgelegenheiten erhöhen sich jedoch entsprechend. Mehr Probleme, die sonst kein Forum finden, werden in die wenigen Entscheidungsarenen hineingetragen und verzögern möglicherweise die Entscheidungsfindung. Eine verbesserte Auswahl der Teilnehmer vorab im Blick auf ihren Bezug zu den in der Entscheidungsgelegenheit anstehenden Problemen erscheint zwar erstrebenswert, wird sich aber aufgrund der Dynamik eines Entscheidungsprozesses nicht immer verwirklichen lassen. Bestimmte Sachverhalte und Querverbindungen ergeben sich erst im Projektverlauf und man würde den Zugang von Mitarbeitern, die zur Problemlösung beitragen könnten, erschweren. Auf der anderen Seite würde eine zu stark vorher determinierte Festlegung der Teilnehmer unnötige Anwesenheiten erzwingen und könnte sich eher noch als Hindernis für den Entscheidungsprozeß erweisen.

Aus Sicht des *Pragmatikers* sind Garbage-Can-Prozesse nicht vermeidbar, aber auch nicht unbeeinflußbar und lassen sich deshalb durchaus für eigene Interessen nutzen. Cohen und March haben selbst einige Hinweise gegeben, wie solche Prozesse aus dem Wissen um deren Ablauf beeinflußt werden könnten (siehe Abb. 2).[25]

Die analysierte Fallstudie belegt die Nützlichkeit dieser Hinweise. Der Leiter des zentralen Kundendienstes, der ab dem 2. Meeting immer anwesend war, konnte seine Vorstellungen letztendlich weitgehend durchsetzen, während die anderen Teilnehmer frühzeitig nicht mehr erschienen oder frustriert zu anderen Entscheidungsgelegenheiten abwanderten. Die entscheidenden Weichen des Projekts wurden im 4. Meeting gestellt, als neben dem Projektleiter einzig eben dieser Leiter des zentralen Kundendienstes anwesend war. Diese Liste von Hinweisen entbehrt natürlich nicht eines gewissen Opportunismus, da derjenige, der um diese Zusammenhänge weiß, sie durchaus zur Verwirklichung seiner Interessen und u.U. zu Lasten anderer Teilnehmer einsetzen kann.

Der von March als *Enthusiast* titulierte dritte Reaktionstyp sieht in Garbage Can-Prozessen eine gewisse Eleganz und Instrumentalität. Die Dynamik des Flusses von Problemen und Lösungen wird als eine Art Markt verstanden, in dem passende Lösungen zu Problemen finden und vice versa; das zeitgebundene Zusammentreffen der Ströme wird als intelligenter Weg zur Ordnung der Aufmerksamkeit der Teilnehmer gesehen. Danach ergeben sich geradezu Vorteile aus der flexiblen Implementierung, den unkoordinierten Handlungen sowie der kognitiven Konfusion.[27] Demnach sollte man Garbage Can-Prozesse weder zu verhindern suchen, noch sie nur als unvermeidlich für eigene Zwecke instrumentalisieren, sondern sie sogar fördern.

Wem diese letzte Sichtweise zu weitgehend und unrealistisch erscheint, sei auf einige, nicht von der Hand zu weisende funktionale Eigenschaften von Garbage Can-Prozessen, auch im vorliegenden Fallbeispiel, hingewiesen. Ambivalente Zielsetzungen verhindern eine frühzeitige Einengung der Teilnehmer und lassen Raum für Änderungen und Anpassungen, die sich im Verlauf des Entscheidungsprozesses ergeben, da sich konkrete Ziele und Präferenzen häufig erst durch intensive Beschäftigung und durch eigenes Handeln herausbilden. Dadurch werden auch erzwungene Quasilösungen vermieden, die aus dem schlichten Muß eines Ergebnisses für voher festgelegte Ziele entspringen. Im analysierten Projekt etwa führte die Verschiebung der Zielsetzung weg von einer Zentralisierungslösung letztendlich zu einigen konkreten Änderungen der Buchungstätigkeit, die bei einer stärkeren Determinierung auf die Problematik der Zentralisierung nicht erreicht worden wären. Garbage Can-Prozesse erfüllen auch die Funktion einer Pufferung von Inkonsistenzen. Durch die Vielfalt von Problemen, Lösungen und Teilnehmern muß der Entscheidungsprozeß nicht konsistent und rational ablaufen. Änderungen können

A[illegible]: *Hinweise zum pragmatischen Umgang mit Garbage Can-Prozessen*

1. Nimm Dir Zeit! Da Zeit und Aufmerksamkeit knappe Güter sind, kann ein Teilnehmer, der Zeit investiert, eher seine Ziele verwirklichen.
2. Harre aus! Ein Vorschlag, der heute abgelehnt wird, kann trotzdem morgen noch angenommen werden. Wechselnde Teilnehmer und Interesse versprechen dem Ausdauernden Erfolg.
3. Ersetze Stichhaltiges durch Statussymbole, weil für viele Teilnehmer symbolische Ergebnisse wichtiger sind als substantielle Inhalte.
4. Ermögliche die Teilnahme von Gegnern, die durch die Einbindung in den Entscheidungsprozeß frustriert werden können und ihre Ansprüche und Einsprüche dadurch zurücknehmen.
5. Überlade die Entscheidungsgelegenheit! Ein einzelner Vorschlag kann leicht zu Fall gebracht werden. Ein Teilnehmer mit vielen Vorschlägen wird eher einige davon duchbringen.
6. Schütze die Entscheidungsgelegenheit, indem Du nicht relevante Probleme und Lösungen auf andere, harmlose Entscheidungsgelegenheiten abwälzt.
7. Manage die Entscheidungsfindung unauffällig. Viele kleine Eingriffe sind wirkungsvoller und provozieren weniger Aufmerksamkeit und Opposition als wenige große.
8. Interpretiere die Geschichte. Ein Verständnis vergangener Entscheidungsprozesse gibt Aufschlüsse über aktuelle Verhaltensmuster und verleiht der eigenen Argumentation eine Legitimation.

leichter durchgesetzt werden, weil sie weniger endgültig erscheinen.

Schließlich bieten Garbage Can-Prozesse auch Arenen für die Austragung von Konflikten und die Diskussion von Problemen verschiedenster Art. Mitarbeiter haben ein Forum, um ihre Probleme vorzubringen. Kontroversen werden legitimiert. Im vorliegenden Fall zeigte sich vor allem in den ersten Meetings, daß einzelne Mitarbeiter ihre speziellen Probleme wie etwa die unzureichende technische Ausstattung oder die Probleme in der Kommunikation mit anderen Abteilungen in der gegebenen Projektarena abladen konnten. Einige Probleme, die schon längere Zeit im Unternehmen »virulent« waren wie etwa die Verbesserung der Anwenderfreundlichkeit der EDV-Benutzeroberflächen sowie die Streichung einiger besonders bearbeitungsintensiver Spezial-Codes konnten im Rahmen des Projekts tatsächlich in Angriff genommen und gelöst werden, obwohl sie nicht direkt mit der Zielsetzung des Projekts verknüpft waren.

Diese kurze Darstellung zeigt, daß Garbage Can-Prozesse bei genauerem Hinsehen durchaus nicht als ausschließlich dysfunktional angesehen werden können, gleichwohl sie aus der Sicht eines von der rationalen Entscheidungstheorie geprägten Beobachters völlig unübersichtlich und desorganisiert erscheinen. March selbst sieht keine Notwendigkeit, sich für eine der drei Alternativen zum Umgang mit Garbage Can-Prozessen zu entscheiden,[28] da jede eine gewisse Legitimation und andererseits auch Schwachstellen aufweist, was aber im Blick auf eine Praxisorientierung bei Reorganisationen etwas unbefriedigend erscheint. Eine Abwägung der Vor- und Nachteile erweist sich jedoch als schwierig, zumal auch die empirische Basis insbesondere hinsichtlich der Effizienz von Garbage Can-Prozessen fehlt. Extrempositionen sollten allerdings m. E. vermieden werden. Der Versuch einer vollständigen Eliminierung von Garbage Can-Elementen in Entscheidungsprozessen auf der einen Seite erscheint aus den bereits genannten Gründen zum Scheitern verurteilt und würde die beschriebenen negativen Wirkungen zeitigen. Auf der anderen Seite würde eine gezielte Förderung von Garbage Can-Prozessen jedoch einer Unkoordiniertheit auch in nicht mehrdeutige Entscheidungssituationen Einzug verschaffen, was deren Zielgerichtetheit und Effizienz sicherlich beeinträchtigen würde. In den Entscheidungssituationen, die die Bedingungen der Ambivalenz im Sinne des Garbage Can-Modells aufweisen, könnte sich eine positivere Einstellung zu der »Nichtrationalität« des Prozesses jedoch als vorteilhaft erweisen. Frustrationen und Enttäuschungen etwa über veränderte Ziele o.ä. könnten abgebaut werden, da die Erwartungen von vorneherein nicht so fixiert sind. Es ist auch denkbar, daß vor diesem Hintergrund eine Vielzahl der als gescheitert geltenden Reorganisationen eigentlich gar nicht gescheitert sind. Die ex ante propagierten großen Ziele wurden zwar vielleicht nicht erreicht, aber sie waren im Sinne des Garbage Can-Modells u.U. auch nicht adäquat und haben sich im zeitlichen Verlauf der Reorganisation verändert. Vielleicht konnten aber eine ganze Reihe von Entscheidungsgelegenheiten im Rahmen der Reorganisation genutzt werden, um viele Detailprobleme in der Organisation zu lösen, die bis dato kein Forum zu ihrer Diskussion und Lösung gefunden hatten, wie dies auch im analysierten Reorganisationsprojekt der Fall war. Es wäre tatsächlich eine interessante Aufgabe, sogenannte gescheiterte Reorganisationen einmal daraufhin empirisch zu untersuchen.

Resümee

Das Garbage Can-Modell bietet eine interessante Perspektive auf den Ablauf von Reorganisationen. Das vorliegende Fallbeispiel sowie die in der Literatur diskutierten empirischen Studien deuten darauf hin, daß Garbage Can-Prozesse durchaus eine realistische Abbildung des Ablaufs von Reorganisationen darstellen können. Hinsichtlich des Umgangs mit derartigen Prozessen besteht sicherlich noch Diskussionsbedarf. Angesichts der Plausibilität und Überzeugungskraft des Modells sowie den in weiten Teilen im Vergleich zur rationalen Entscheidungstheorie realistischeren Annahmen überrascht die weitgehende Nichtberücksichtigung des Garbage Can-Modells in der Praxis zunächst etwas. Für die geringe Rezeption und schwache Akzeptanz lassen sich jedoch mehrere Gründe finden, für die teilweise auch die Autoren selbst mitverantwortlich sind: Die Bezeichnung ihres Modells – Mülleimermodell – klingt zunächst schon etwas despektierlich und wenig einladend. Auch andere Begriffe des Modells wie etwa die Sicht von Unternehmen als »Organisierte Anarchien« wirken, wenn nicht mißverständlich, so doch zumindest wenig attraktiv für Praktiker oder Wissenschaftler, die an das Denken und die Sprache der weithin verbreiteten Rationalmodelle gewöhnt und darin geschult sind. Weitere begriffliche Ungenauigkeiten sowie eine an das Modell gekoppelte, wenig aussagekräftige Computersimulation[28] haben neben der dünnen empirischen Basis den Zugang zu diesem Modell vielleicht zusätzlich erschwert. Dennoch zeigt die in diesem Beitrag vorgestellte Anwendung des Garbage Can-Modells auf die Reorganisationsproblematik, daß aus dem Modell interessante und bedenkenswerte Implikationen für ein Verständnis und den Umgang mit Reorganisationen gewonnen werden können.

Anmerkungen

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Summary

The decision process during reorganization in practice often appears intransparent and unstructured. Rational decision theory does not provide a satisfying answer to this phenomena. Which characteristics mark the reorganization process and how can decision-making be described and evaluated appropriately? The article elaborates on those questions in a case study from the transportation industry. For the description of the decision-making process the case focuses on the garbage-can model. The article concludes with a discussion on the relevance and consequences of the garbage can model for reorganizations.

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EXPLORATION AND EXPLOITATION IN ORGANIZATIONAL LEARNING*

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This paper considers the relation between the exploration of new possibilities and the exploitation of old certainties in organizational learning. It examines some complications in allocating resources between the two, particularly those introduced by the distribution of costs and benefits across time and space, and the effects of ecological interaction. Two general situations involving the development and use of knowledge in organizations are modeled. The first is the case of mutual learning between members of an organization and an organizational code. The second is the case of learning and competitive advantage in competition for primacy. The paper develops an argument that adaptive processes, by refining exploitation more rapidly than exploration, are likely to become effective in the short run but self-destructive in the long run. The possibility that certain common organizational practices ameliorate that tendency is assessed.
(ORGANIZATIONAL LEARNING: RISK TAKING; KNOWLEDGE AND COMPETITIVE ADVANTAGE)

A central concern of studies of adaptive processes is the relation between the exploration of new possibilities and the exploitation of old certainties (Schumpeter 1934; Holland 1975; Kuran 1988). Exploration includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Exploitation includes such things as refinement, choice, production, efficiency, selection, implementation, execution. Adaptive systems that engage in exploration to the exclusion of exploitation are likely to find that they suffer the costs of experimentation without gaining many of its benefits. They exhibit too many undeveloped new ideas and too little distinctive competence. Conversely, systems that engage in exploitation to the exclusion of exploration are likely to find themselves trapped in suboptimal stable equilibria. As a result, maintaining an appropriate balance between exploration and exploitation is a primary factor in system survival and prosperity.

This paper considers some aspects of such problems in the context of organizations. Both exploration and exploitation are essential for organizations, but they compete for scarce resources. As a result, organizations make explicit and implicit choices between the two. The explicit choices are found in calculated decisions about alternative investments and competitive strategies. The implicit choices are buried in many features of organizational forms and customs, for example, in organizational procedures for accumulating and reducing slack, in search rules and practices, in the ways in which targets are set and changed, and in incentive systems. Understanding the choices and improving the balance between exploration and exploitation are complicated by the fact that returns from the two options vary not only with respect to their expected values, but also with respect to their variability, their timing, and their distribution within and beyond the organization. Processes for allocating resources between them, therefore, embody intertemporal, interinstitutional, and interpersonal comparisons, as well as risk preferences. The difficulties involved in making

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such comparisons lead to complications in specifying appropriate trade-offs, and in achieving them.

1. The Exploration / Exploitation Trade-Off

Exploration and Exploitation in Theories of Organizational Action

In rational models of choice, the balance between exploration and exploitation is discussed classically in terms of a theory of rational search (Radner and Rothschild 1975; Hey 1982). It is assumed that there are several alternative investment opportunities, each characterized by a probability distribution over returns that is initially unknown. Information about the distribution is accumulated over time, but choices must be made between gaining new information about alternatives and thus improving future returns (which suggests allocating part of the investment to searching among uncertain alternatives), and using the information currently available to improve present returns (which suggests concentrating the investment on the apparently best alternative). The problem is complicated by the possibilities that new investment alternatives may appear, that probability distributions may not be stable, or that they may depend on the choices made by others.

In theories of limited rationality, discussions of the choice between exploration and exploitation emphasize the role of targets or aspiration levels in regulating allocations to search (Cyert and March 1963). The usual assumption is that search is inhibited if the most preferred alternative is above (but in the neighborhood of) the target. On the other hand, search is stimulated if the most preferred known alternative is below the target. Such ideas are found both in theories of satisficing (Simon 1955) and in prospect theory (Kahneman and Tversky 1979). They have led to attempts to specify conditions under which target-oriented search rules are optimal (Day 1967). Because of the role of targets, discussions of search in the limited rationality tradition emphasize the significance of the adaptive character of aspirations themselves (March 1988).

In studies of organizational learning, the problem of balancing exploration and exploitation is exhibited in distinctions made between refinement of an existing technology and invention of a new one (Winter 1971; Levinthal and March 1981). It is clear that exploration of new alternatives reduces the speed with which skills at existing ones are improved. It is also clear that improvements in competence at existing procedures make experimentation with others less attractive (Levitt and March 1988). Finding an appropriate balance is made particularly difficult by the fact that the same issues occur at levels of a nested system—at the individual level, the organizational level, and the social system level.

In evolutionary models of organizational forms and technologies, discussions of the choice between exploration and exploitation are framed in terms of balancing the twin processes of variation and selection (Ashby 1960; Hannan and Freeman 1987). Effective selection among forms, routines, or practices is essential to survival, but so also is the generation of new alternative practices, particularly in a changing environment. Because of the links among environmental turbulence, organizational diversity, and competitive advantage, the evolutionary dominance of an organizational practice is sensitive to the relation between the rate of exploratory variation reflected by the practice and the rate of change in the environment. In this spirit, for example, it has been argued that the persistence of garbage-can decision processes in organizations is related to the diversity advantage they provide in a world of relatively unstable environments, when paired with the selective efficiency of conventional rationality (Cohen 1986).

The Vulnerability of Exploration

Compared to returns from exploitation, returns from exploration are systematically less certain, more remote in time, and organizationally more distant from the locus of action and adaption. What is good in the long run is not always good in the short run. What is good at a particular historical moment is not always good at another time. What is good for one part of an organization is not always good for another part. What is good for an organization is not always good for a larger social system of which it is a part. As organizations learn from experience how to divide resources between exploitation and exploration, this distribution of consequences across time and space affects the lessons learned. The certainty, speed, proximity, and clarity of feedback ties exploitation to its consequences more quickly and more precisely than is the case with exploration. The story is told in many forms. Basic research has less certain outcomes, longer time horizons, and more diffuse effects than does product development. The search for new ideas, markets, or relations has less certain outcomes, longer time horizons, and more diffuse effects than does further development of existing ones.

Because of these differences, adaptive processes characteristically improve exploitation more rapidly than exploration. These advantages for exploitation cumulate. Each increase in competence at an activity increases the likelihood of rewards for engaging in that activity, thereby further increasing the competence and the likelihood (Argyris and Schön 1978; David 1985). The effects extend, through network externalities, to others with whom the learning organization interacts (Katz and Shapiro 1986; David and Bunn 1988). Reason inhibits foolishness; learning and imitation inhibit experimentation. This is not an accident but is a consequence of the temporal and spatial proximity of the effects of exploitation, as well as their precision and interconnectedness.

Since performance is a joint function of potential return from an activity and present competence of an organization at it, organizations exhibit increasing returns to experience (Arthur 1984). Positive local feedback produces strong path dependence (David 1990) and can lead to suboptimal equilibria. It is quite possible for competence in an inferior activity to become great enough to exclude superior activities with which an organization has little experience (Herriott, Levinthal, and March 1985). Since long-run intelligence depends on sustaining a reasonable level of exploration, these tendencies to increase exploitation and reduce exploration make adaptive processes potentially self-destructive.

The Social Context of Organizational Learning

The trade-off between exploration and exploitation exhibits some special features in the social context of organizations. The next two sections of the present paper describe two simple models of adaptation, use them to elaborate the relation between exploitation and exploration, and explore some implications of the relation for the accumulation and utilization of knowledge in organizations. The models identify some reasons why organizations may want to control learning and suggest some procedures by which they do so.

Two distinctive features of the social context are considered. The first is the mutual learning of an organization and the individuals in it. Organizations store knowledge in their procedures, norms, rules, and forms. They accumulate such knowledge over time, learning from their members. At the same time, individuals in an organization are socialized to organizational beliefs. Such mutual learning has implications for understanding and managing the trade-off between exploration and exploitation in organizations. The second feature of organizational learning considered here is

the context of competition for primacy. Organizations often compete with each other under conditions in which relative position matters. The mixed contribution of knowledge to competitive advantage in cases involving competition for primacy creates difficulties for defining and arranging an appropriate balance between exploration and exploitation in an organizational setting.

2. Mutual Learning in the Development of Knowledge

Organizational knowledge and faiths are diffused to individuals through various forms of instruction, indoctrination, and exemplification. An organization socializes recruits to the languages, beliefs, and practices that comprise the organizational code (Whyte 1957; Van Maanen 1973). Simultaneously, the organizational code is adapting to individual beliefs. This form of mutual learning has consequences both for the individuals involved and for an organization as a whole. In particular, the trade-off between exploration and exploitation in mutual learning involves conflicts between short-run and long-run concerns and between gains to individual knowledge and gains to collective knowledge.

A Model of Mutual Learning

Consider a simple model of the development and diffusion of organizational knowledge. There are four key features to the model:

(1) There is an external reality that is independent of beliefs about it. Reality is described as having m dimensions, each of which has a value of 1 or -1. The (independent) probability that any one dimension will have a value of 1 is 0.5.

(2) At each time period, beliefs about reality are held by each of n individuals in an organization and by an organizational code of received truth. For each of the m dimensions of reality, each belief has a value of 1, 0, or -1. This value may change over time.

(3) Individuals modify their beliefs continuously as a consequence of socialization into the organization and education into its code of beliefs. Specifically, if the code is 0 on a particular dimension, individual belief is not affected. In each period in which the code differs on any particular dimension from the belief of an individual, individual belief changes to that of the code with probability, p_1. Thus, p_1 is a parameter reflecting the effectiveness of socialization, i.e., learning *from* the code. Changes on the several dimensions are assumed to be independent of each other.

(4) At the same time, the organizational code adapts to the beliefs of those individuals whose beliefs correspond with reality on more dimensions than does the code. The probability that the beliefs of the code will be adjusted to conform to the dominant belief within the superior group on any particular dimension depends on the level of agreement among individuals in the superior group and on p_2.[1] Thus, p_2 is a parameter reflecting the effectiveness of learning *by* the code. Changes on the several dimensions are assumed to be independent of each other.

Within this system, initial conditions include: a reality m-tuple (m dimensions, each of which has a value of 1 or -1, with independent equal probability); an organizational code m-tuple (m dimensions, each of which is initially 0); and n

[1]More precisely, if the code is the same as the majority view among those individuals whose overall knowledge score is superior to that of the code, the code remains unchanged. If the code differs from the majority view on a particular dimension at the start of a time period, the probability that it will be unchanged at the end of period is $(1 - p_2)^k$, where k ($k > 0$) is the number of individuals (within the superior group) who differ from the code on this dimension minus the number who do not. This formulation makes the effective rate of code learning dependent on k, which probably depends on n. In the present simulations, n is not varied.

individual m-tuples (m dimensions, with values equal 1, 0, or -1, with equal probabilities).

Thus, the process begins with an organizational code characterized by neutral beliefs on all dimensions and a set of individuals with varying beliefs that exhibit, on average, no knowledge. Over time, the organizational code affects the beliefs of individuals, even while it is being affected by those beliefs. The beliefs of individuals do not affect the beliefs of other individuals directly but only through affecting the code. The effects of reality are also indirect. Neither the individuals nor the organizations experience reality. Improvement in knowledge comes by the code mimicking the beliefs (including the false beliefs) of superior individuals and by individuals mimicking the code (including its false beliefs).

Basic Properties of the Model in a Closed System

Consider such a model of mutual learning first within a closed system having fixed organizational membership and a stable reality. Since realizations of the process are subject to stochastic variability, repeated simulations using the same initial conditions and parameters are used to estimate the distribution of outcomes. In all of the results reported here, the number of dimensions of reality (m) is set at 30, the number of individuals (n) is set at 50, and the number of repeated simulations is 80. The quantitative levels of the results and the magnitude of the stochastic fluctuations reported depend on these specifications, but the qualitative results are insensitive to values of m and n.

Since reality is specified, the state of knowledge at any particular time period can be assessed in two ways. First, the proportion of reality that is correctly represented in the organizational code can be calculated for any period. This is the knowledge level of the code for that period. Second, the proportion of reality that is correctly represented in individual beliefs (on average) can be calculated for any period. This is the average knowledge level of the individuals for that period.

Within this closed system, the model yields time paths of organizational and individual beliefs, thus knowledge levels, that depend stochastically on the initial conditions and the parameters affecting learning. The basic features of these histories can be summarized simply: Each of the adjustments in beliefs serves to eliminate differences between the individuals and the code. Consequently, the beliefs of individuals and the code converge over time. As individuals in the organization become more knowledgeable, they also become more homogeneous with respect to knowledge. An equilibrium is reached at which all individuals and the code share the same (not necessarily accurate) belief with respect to each dimension. The equilibrium is stable.

Effects of learning rates. Higher rates of learning lead, on average, to achieving equilibrium earlier. The equilibrium level of knowledge attained by an organization also depends interactively on the two learning parameters. Figure 1 shows the results when we assume that p_1 is the same for all individuals. Slower socialization (lower p_1) leads to greater knowledge at equilibrium than does faster socialization, particularly when the code learns rapidly (high p_2). When socialization is slow, more rapid learning by the code leads to greater knowledge at equilibrium; but when socialization is rapid, greater equilibrium knowledge is achieved through slower learning by the code. By far the highest equilibrium knowledge occurs when the code learns rapidly from individuals whose socialization to the code is slow.

The results pictured in Figure 1 confirm the observation that rapid learning is not always desirable (Herriott, Levinthal and March 1985; Lounamaa and March 1987).

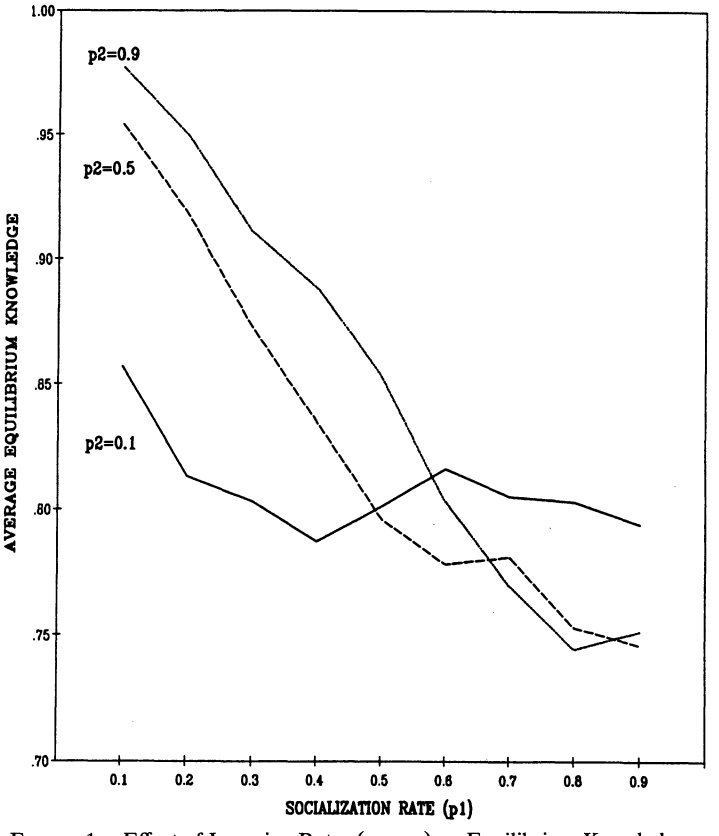

FIGURE 1. Effect of Learning Rates (p_1, p_2) on Equilibrium Knowledge. $M = 30$; $N = 50$; 80 Iterations.

In previous work, it was shown that slower learning allows for greater exploration of possible alternatives and greater balance in the development of specialized competences. In the present model, a different version of the same general phenomenon is observed. The gains to individuals from adapting rapidly to the code (which is consistently closer to reality than the average individual) are offset by second-order losses stemming from the fact that the code can learn only from individuals who deviate from it. Slow learning on the part of individuals maintains diversity longer, thereby providing the exploration that allows the knowledge found in the organizational code to improve.

Effects of learning rate heterogeneity. The fact that fast individual learning from the code tends to have a favorable first-order effect on individual knowledge but an adverse effect on improvement in organizational knowledge and thereby on long-term individual improvement suggests that there might be some advantage to having a mix of fast and slow learners in an organization. Suppose the population of individuals in an organization is divided into two groups, one consisting of individuals who learn rapidly from the code ($p_1 = 0.9$) and the other consisting of individuals who learn slowly ($p_1 = 0.1$).

If an organization is partitioned into two groups in this way, the mutual learning process achieves an equilibrium in which all individuals and the code share the same beliefs. As would be expected from the results above with respect to homogeneous

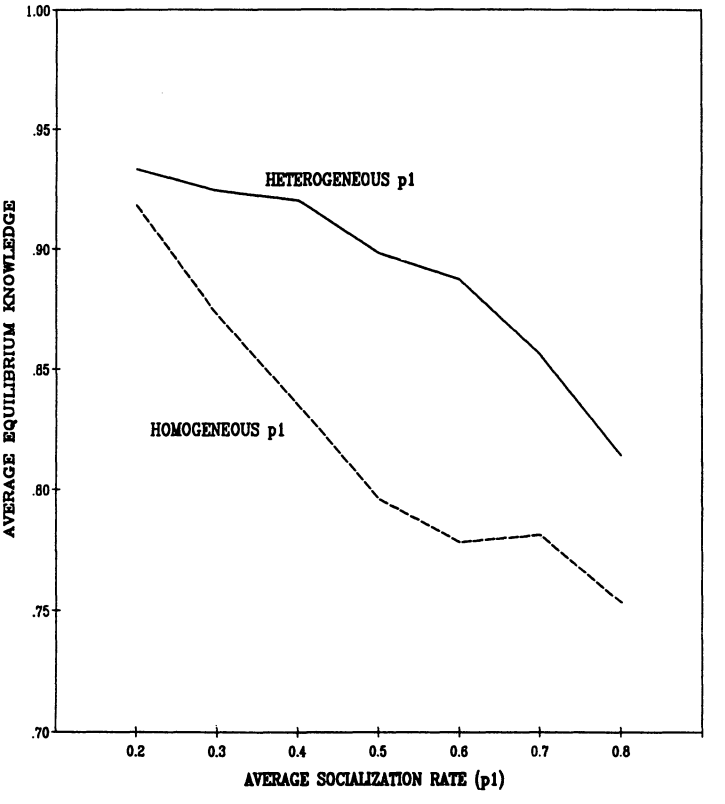

FIGURE 2. Effect of Heterogeneous Socialization Rates ($p_1 = 0.1, 0.9$) on Equilibrium Knowledge. $M = 30$; $N = 50$; $p_2 = 0.5$; 80 Iterations.

socialization rates, larger fractions of fast learners result in the process reaching equilibrium faster and in lower levels of knowledge at equilibrium than do smaller fractions of fast learners. However, as Figure 2 shows, for any average rate of learning from the code, it is better from the point of view of equilibrium knowledge to have that average reflect a mix of fast and slow learners rather than a homogeneous population. For equivalent average values of the socialization learning parameter (p_1), the heterogeneous population consistently produces higher equilibrium knowledge.

On the way to equilibrium, the knowledge gains from variability are disproportionately due to contributions by slow learners, but they are disproportionately realized (in their own knowledge) by fast learners. Figure 3 shows the effects on period-20 knowledge of varying the fraction of the population of individuals who are fast learners ($p_1 = 0.9$) rather than slow learners ($p_1 = 0.1$). Prior to reaching equilibrium, individuals with a high value for p_1 gain from being in an organization in which there are individuals having a low value for p_1, but the converse is not true.

These results indicate that the fraction of slow learners in an organization is a significant factor in organizational learning. In the model, that fraction is treated as a parameter. Disparities in the returns to the two groups and their interdependence make optimizing with respect to the fraction of slow learners problematic if the rates of individual learning are subject to individual control. Since there are no obvious individual incentives for learning slowly in a population in which others are learning rapidly, it may be difficult to arrive at a fraction of slow learners that is optimal from the point of view of the code if learning rates are voluntarily chosen by individuals.

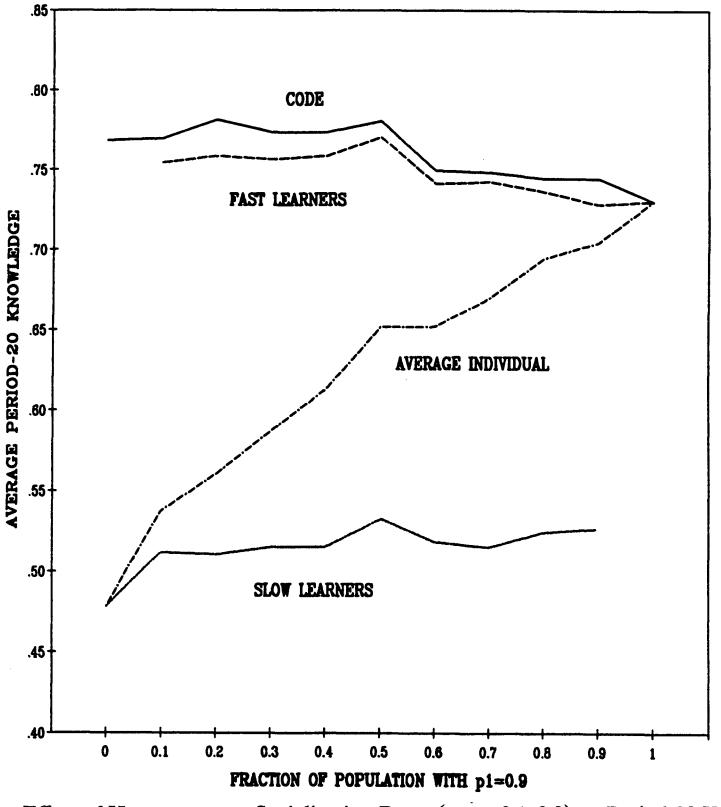

FIGURE 3. Effect of Heterogeneous Socialization Rates ($p_1 = 0.1, 0.9$) on Period-20 Knowledge. $M = 30$; $N = 50$; $p_1 = 0.1, 0.9$; $p_2 = 0.5$; 80 Iterations.

Basic Properties of the Model in a More Open System

These results can be extended by examining some alternative routes to selective slow learning in a somewhat more open system. Specifically, the role of turnover in the organization and turbulence in the environment are considered. In the case of turnover, organizational membership is treated as changing. In the case of turbulence, environmental reality is treated as changing.

Effects of personnel turnover. In the previous section, it was shown that variability is sustained by low values of p_1. Slow learners stay deviant long enough for the code to learn from them. An alternative way of producing variability in an organization is to introduce personnel turnover. Suppose that each time period each individual has a probability, p_3, of leaving the organization and being replaced by a new individual with a set of naive beliefs described by an m-tuple, having values equal to 1, 0, or -1, with equal probabilities. As might be expected, there is a consistent negative first-order effect of turnover on average individual knowledge. Since there is a positive relation between length of service in the organization and individual knowledge, the greater the turnover, the shorter the average length of service and the lower the average individual knowledge at any point. This effect is strong.

The effect of turnover on the organizational code is more complicated and reflects a trade-off between learning rate and turnover rate. Figure 4 shows the period-20 results for two different values of the socialization rate (p_1). If p_1 is relatively low, period-20 code knowledge declines with increasing turnover. The combination of slow

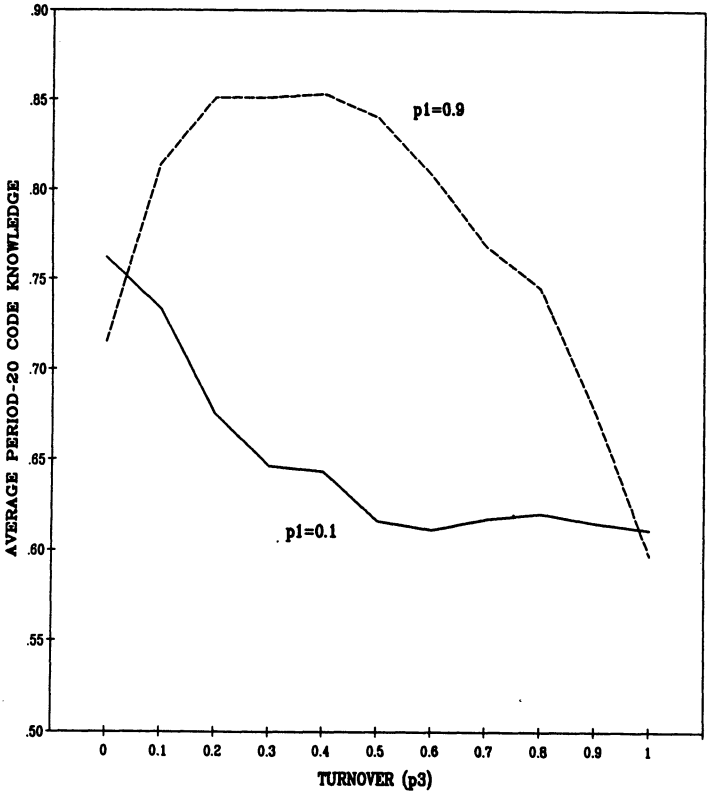

FIGURE 4. Effect of Turnover (p_3) and Socialization Rate (p_1) on Period-20 Code Knowledge. $M = 30$; $N = 50$; $p_2 = 0.5$; 80 Iterations.

learning and rapid turnover leads to inadequate exploitation. However, if p_1 is relatively high, moderate amounts of turnover improve the organizational code. Rapid socialization of individuals into the procedures and beliefs of an organization tends to reduce exploration. A modest level of turnover, by introducing less socialized people, increases exploration, and thereby improves aggregate knowledge. The level of knowledge reflected by the organizational code is increased, as is the average individual knowledge of those individuals who have been in the organization for some time. Note that this effect does not come from the superior knowledge of the average new recruit. Recruits are, on average, less knowledgeable than the individuals they replace. The gains come from their diversity.

Turnover, like heterogeneity in learning rates, produces a distribution problem. Contributions to improving the code (and subsequently individual knowledge) come from the occasional newcomers who deviate from the code in a favorable way. Old-timers, on average, know more, but what they know is redundant with knowledge already reflected in the code. They are less likely to contribute new knowledge on the margin. Novices know less on average, but what they know is less redundant with the code and occasionally better, thus more likely to contribute to improving the code.

Effects of environmental turbulence. Since learning processes involve lags in adjustment to changes, the contribution of learning to knowledge depends on the amount of turbulence in the environment. Suppose that the value of any given dimension of reality shifts (from 1 to -1 or -1 to 1) in a given time period with probability p_4.

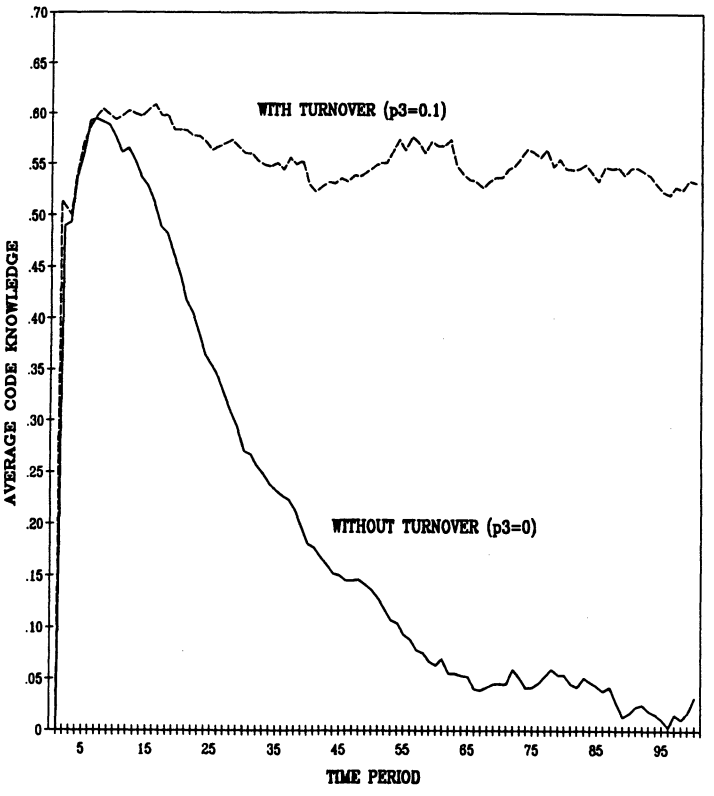

FIGURE 5. Effect of Turbulence (p_4) on Code Knowledge over Time with and Without Turnover (p_3). $M = 30$; $N = 50$; $p_1 = 0.5$; $p_2 = 0.5$; $p_4 = 0.02$; 80 Iterations.

This captures in an elementary way the idea that understanding the world may be complicated by turbulence in the world. Exogenous environmental change makes adaptation essential, but it also makes learning from experience difficult (Weick 1979). In the model, the level of knowledge achieved in a particular (relatively early) time period decreases with increasing turbulence.

In addition, mutual learning has a dramatic long-run degenerate property under conditions of exogenous turbulence. As the beliefs of individuals and the code converge, the possibilities for improvement in either decline. Once a knowledge equilibrium is achieved, it is sustained indefinitely. The beliefs reflected in the code and those held by all individuals remain identical and unchanging, regardless of changes in reality. Even before equilibrium is achieved, the capabilities for change fall below the rate of change in the environment. As a result, after an initial period of increasing accuracy, the knowledge of the code and individuals is systematically degraded through changes in reality. Ultimately, the accuracy of belief reaches chance (i.e., where a random change in reality is as likely to increase accuracy of beliefs as it is to decrease it). The process becomes a random walk.

The degeneracy is avoided if there is turnover. Figure 5 plots the average level of code knowledge over time under conditions of turbulence ($p_4 = 0.02$). Two cases of learning are plotted, one without turnover ($p_3 = 0$), the other with moderate turnover ($p_3 = 0.1$). Where there is turbulence without turnover, code knowledge first rises to a moderate level, and then declines to 0, from which it subsequently wanders randomly. With turnover, the degeneracy is avoided and a moderate level of code knowledge is sustained in the face of environmental change. The positive effects of moderate turnover depend, of course, on the rules for selecting new recruits. In the

present case, recruitment is not affected by the code. Replacing departing individuals with recruits closer to the current organizational code would significantly reduce the efficiency of turnover as a source of exploration.

Turnover is useful in the face of turbulence, but it produces a disparity between code knowledge and the average knowledge of individuals in the organization. As a result, the match between turnover rate and level of turbulence that is desirable from the point of view of the organization's knowledge is not necessarily desirable from the point of view of the knowledge of every individual in it, or individuals on average. In particular, where there is turbulence, there is considerable individual advantage to having tenure in an organization that has turnover. This seems likely to produce pressures by individuals to secure tenure for themselves while restricting it for others.

3. Knowledge and Ecologies of Competition

The model in the previous section examines one aspect of the social context of adaptation in organizations, the ways in which individual beliefs and an organizational code draw from each other over time. A second major feature of the social context of organizational learning is the competitive ecology within which learning occurs and knowledge is used. External competitive processes pit organizations against each other in pursuit of scarce environmental resources and opportunities. Examples are competition among business firms for customers and governmental subsidies. Internal competitive processes pit individuals in the organization against each other in competition for scarce organizational resources and opportunities. Examples are competition among managers for internal resources and hierarchical promotion. In these ecologies of competition, the competitive consequences of learning by one organization depend on learning by other organizations. In this section, these links among learning, performance, and position in an ecology of competition are discussed by considering some ways in which competitive advantage is affected by the accumulation of knowledge.

Competition and the Importance of Relative Performance

Suppose that an organization's realized performance on a particular occasion is a draw from a probability distribution that can be characterized in terms of some measure of average value (x) and some measure of variability (v). Knowledge, and the learning process that produces it, can be described in terms of their effects on these two measures. A change in an organization's performance distribution that increases average performance (i.e., makes $x' > x$) will often be beneficial to an organization, but such a result is not assured when relative position within a group of competing organizations is important. Where returns to one competitor are not strictly determined by that competitor's own performance but depend on the relative standings of the competitors, returns to changes in knowledge depend not only on the magnitude of the changes in the expected value but also on changes in variability and on the number of competitors.

To illustrate the phenomenon, consider the case of competition for primacy between a reference organization and N other organizations, each having normal performance distributions with mean $= x$ and variance $= v$. The chance of the reference organization having the best performance within a group of identical competitors is $1/(N + 1)$. We compare this situation to one in which the reference organization has a normal performance distribution with mean $= x'$ and variance $= v'$. We evaluate the probability, P^*, that the (x', v') organization will outperform all of the N (x, v) organizations. A performance distribution with a mean of x' and a variance of v' provides a competitive advantage in a competition for primacy if P^* is

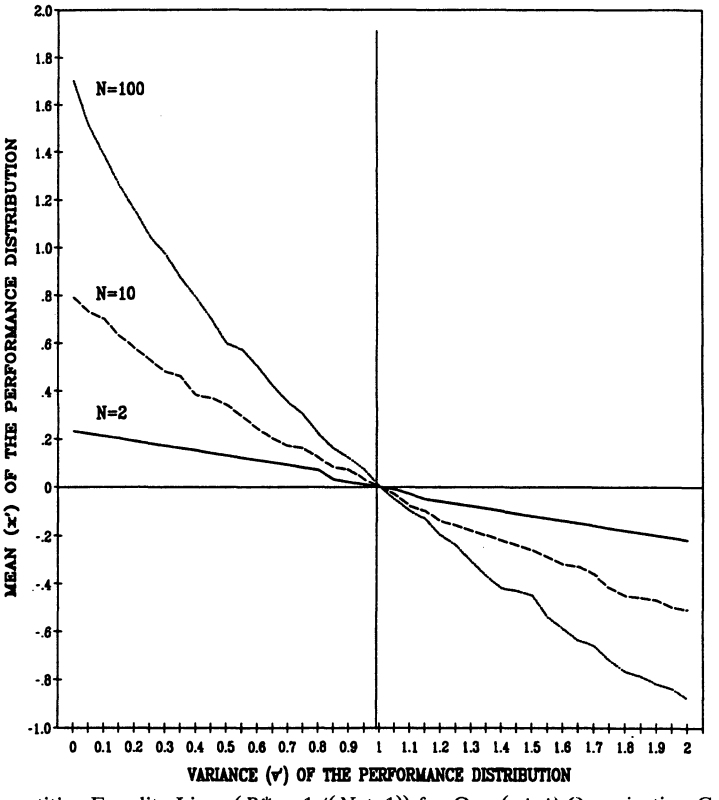

FIGURE 6. Competitive Equality Lines ($P^* = 1/(N + 1)$) for One ($x'v'$) Organization Competing with N (0, 1) Organizations (Normal Performance Distributions).

greater than $1/(N + 1)$. It results in a competitive disadvantage if P^* is less than $1/(N + 1)$.

If an organization faces only one competitor ($N = 1$), it is easy to see that any advantage in mean performance on the part of the reference organization makes P^* greater than $1/(N + 1) = 0.5$, regardless of the variance. Thus, in bilateral competition involving normal performance distributions, learning that increases the mean always pays off, and changes in the variance—whether positive or negative—have no effect.

The situation changes as N increases. Figure 6 shows the competitive success (failure) of an organization having a normal performance distribution with a mean $= x'$ and a variance $= v'$, when that organization is faced with N identical and independent competitors whose performance distributions are normal with mean $= 0$ and variance $= 1$. Each point in the space in Figure 6 represents a different possible normal performance distribution (x', v'). Each line in the figure is associated with a particular N and connects the (x', v') pairs for which $p^* = 1/(N + 1)$.[2] The area to the right and above a line includes (x', v') combinations for which P^* is greater than $1/(N + 1)$, thus that yield a competitive advantage relative to (0, 1). The area to the left and below a line includes (x', v') combinations for which P^* is less than $1/(N + 1)$, thus that yield a competitive disadvantage relative to (0, 1).

[2]The lines are constructed by estimating, for each value of v' from 0 to 2 in steps of 0.05, the value of x' for which $p^* = 1/(N + 1)$. Each estimate is based on 5000 simulations. Since if $x' = 0$ and $v' = 1$, $P^* = 1/(N + 1)$ for any N, each of the lines is constrained to pass through the (0, 1) point.

The pattern is clear. If N is greater than 1 (but finite), increases in either the mean or the variance have a positive effect on competitive advantage, and sufficiently large increases in either can offset decreases in the other. The trade-off between increases in the mean and increases in the variance is strongly affected by N. As the number of competitors increases, the contribution of the variance to competitive advantage increases until at the limit, as N goes to infinity, the mean becomes irrelevant.

Learning, Knowledge, and Competitive Advantage

The effects of learning are realized in changes in the performance distribution. The analysis indicates that if learning increases both the mean and the variance of a normal performance distribution, it will improve competitive advantage in a competition for primacy. The model also suggests that increases in the variance may compensate for decreases in the mean; decreases in the variance may nullify gains from increases in the mean. These variance effects are particularly significant when the number of competitors is large.

The underlying argument does not depend on competition being only for primacy. Such competition is a special case of competition for relative position. The general principle that relative position is affected by variability, and increasingly so as the number of competitors increases, is true for any position. In competition to achieve relatively high positions, variability has a positive effect. In competition to avoid relatively low positions, variability has a negative effect.

Nor does the underlying argument depend on the assumption of normality or other symmetry in the performance distributions. Normal performance distributions are special cases in which the tails of the distribution are specified when the mean and variance are specified. For general distributions, as the number of competitors increases, the likelihood of finishing first depends increasingly on the right-hand tail of the performance distribution, and the likelihood of finishing last depends increasingly on the left-hand tail (David 1981). If learning has different effects on the two tails of the distribution, the right-hand tail effect will be such more important in competition for primacy among many competitors. The left-hand tail will be much more important in competition to avoid finishing last.

Some learning processes increase both average performance and variability. A standard example would be the short-run consequences from adoption of a new technology. If a new technology is so clearly superior as to overcome the disadvantages of unfamiliarity with it, it will offer a higher expected value than the old technology. At the same time, the limited experience with the new technology (relative to experience with the old) will lead to an increased variance. A similar result might be expected with the introduction of a new body of knowledge or new elements of cultural diversity to an organization, for example, through the introduction of individuals with untypical skills, attitudes, ethnicity, or gender.

Learning processes do not necessarily lead to increases in both average performance and variation, however. Increased knowledge seems often to reduce the variability of performance rather than to increase it. Knowledge makes performance more reliable. As work is standardized, as techniques are learned, variability, both in the time required to accomplish tasks and in the quality of task performance, is reduced. Insofar as that increase is reliability comes from a reduction in the left-hand tail, the likelihood of finishing last in a competition among many is reduced without changing the likelihood of finishing first. However, if knowledge has the effect of reducing the right-hand tail of the distribution, it may easily decrease the chance of being best among several competitors even though it also increases average performance. The question is whether you can do exceptionally well, as opposed to better than average, without leaving the confines of conventional action. The answer is

complicated, for it depends on a more careful specification of the kind of knowledge involved and its precise effects on the right-hand tail of the distribution. But knowledge that simultaneously increases average performance and its reliability is not a guarantee of competitive advantage.

Consider, for example, the case of modern information and decision technology based on computers. In cases where time is particularly important, information technology has a major effect on the mean, less on the variance. Some problems in environmental scanning for surprises, changes, or opportunities probably fall into such a category. Under such conditions, appropriate use of information technology seems likely to improve competitive position. On the other hand, in many situations the main effect of information technology is to make outcomes more reliable. For example, additional data, or more detailed analyses, seem likely to increase reliability in decisions more rapidly than they will increase their average returns. In such cases, the effects on the tails are likely to dominate the effects on the mean. The net effect of the improved technology on the chance of avoiding being the worst competitor will be positive, but the effect on the chance of finishing at the head of the pack may well be negative.

Similarly, multiple, independent projects may have an advantage over a single, coordinated effort. The average result from independent projects is likely to be lower than that realized from a coordinated one, but their right-hand side variability can compensate for the reduced mean in a competition for primacy. The argument can be extended more generally to the effects of close collaboration or cooperative information exchange. Organizations that develop effective instruments of coordination and communication probably can be expected to do better (on average) than those that are more loosely coupled, and they also probably can be expected to become more reliable, less likely to deviate significantly from the mean of their performance distributions. The price of reliability, however, is a smaller chance of primacy among competitors.

Competition for Relative Position and Strategic Action

The arguments above assume that the several individual performances of competitors are independent draws from a distribution of possible performances, and that the distribution cannot be arbitrarily chosen by the competitors. Such a perspective is incomplete. It is possible to see both the mean and the reliability of a performance distribution (at least partially) as choices made strategically. In the long run, they represent the result of organizational choices between investments in learning and in consumption of the fruits of current capabilities, thus the central focus of this paper. In the short run, the choice of mean can be seen as a choice of effort or attention. By varying effort, an organization selects a performance mean between an entitlement (zero-effort) and a capability (maximum-effort) level. Similarly, in the short run, variations in the reliability of performance can be seen as choices of knowledge or risk that can be set willfully within the range of available alternatives.

These choices, insofar as they are made rationally, will not, in general, be independent of competition. If relative position matters, as the number of competitors increases, strategies for increasing the mean through increased effort or greater knowledge become less attractive relative to strategies for increasing variability. In the more general situation, suppose organizations face competition from numerous competitors who vary in their average capabilities but who can choose their variances. If payoffs and preferences are such that finishing near the top matters a great deal, those organizations with performance distributions characterized by comparatively low means will (if they can) be willing to sacrifice average performance in order to augment the right-hand tails of their performance distributions. In this way, they

improve their chances of winning, thus force their more talented competitors to do likewise, and thereby convert the competition into a right-hand tail "race" in which average performance (due to ability and effort) becomes irrelevant. These dynamics comprise powerful countervailing forces to the tendency for experience to eliminate exploration and are a reminder that the learning dominance of exploitation is, under some circumstances, constrained not only by slow learning and turnover but also by reason.

4. Little Models and Old Wisdom

Learning, analysis, imitation, regeneration, and technological change are major components of any effort to improve organizational performance and strengthen competitive advantage. Each involves adaptation and a delicate trade-off between exploration and exploitation. The present argument has been that these trade-offs are affected by their contexts of distributed costs and benefits and ecological interaction. The essence of exploitation is the refinement and extension of existing competences, technologies, and paradigms. Its returns are positive, proximate, and predictable. The essence of exploration is experimentation with new alternatives. Its returns are uncertain, distant, and often negative. Thus, the distance in time and space between the locus of learning and the locus for the realization of returns is generally greater in the case of exploration than in the case of exploitation, as is the uncertainty.

Such features of the context of adaptation lead to a tendency to substitute exploitation of known alternatives for the exploration of unknown ones, to increase the reliability of performance rather more than its mean. This property of adaptive processes is potentially self-destructive. As we have seen, it degrades organizational learning in a mutual learning situation. Mutual learning leads to convergence between organizational and individual beliefs. The convergence is generally useful both for individuals and for an organization. However, a major threat to the effectiveness of such learning is the possibility that individuals will adjust to an organizational code before the code can learn from them. Relatively slow socialization of new organizational members and moderate turnover sustain variability in individual beliefs, thereby improving organizational and average individual knowledge in the long run.

An emphasis on exploitation also compromises competitive position where finishing near the top is important. Knowledge-based increases in average performance can be insufficient to overcome the adverse effects produced by reductions in variability. The ambiguous usefulness of learning in a competitive race is not simply an artifact of representing knowledge in terms of the mean and variance of a normal distribution. The key factor is the effect of knowledge on the right-hand tail of the performance distribution. Thus, in the end, the effects stem from the relation between knowledge and discovery. Michael Polanyi, commenting on one of his contributions to physics, observed (Polanyi 1963, p. 1013) that "I would never have conceived my theory, let alone have made a great effort to verify it, if I had been more familiar with major developments in physics that were taking place. Moreover, my initial ignorance of the powerful, false objections that were raised against my ideas protected those ideas from being nipped in the bud."

These observations do not overturn the renaissance. Knowledge, learning, and education remain as profoundly important instruments of human well-being. At best, the models presented here suggest some of the considerations involved in thinking about choices between exploration and exploitation and in sustaining exploration in the face of adaptive processes that tend to inhibit it. The complexity of the distribution of costs and returns across time and groups makes an explicit determination of optimality a nontrivial exercise. But it may be instructive to reconfirm some elements

of folk wisdom asserting that the returns to fast learning are not all positive, that rapid socialization may hurt the socializers even as it helps the socialized, that the development of knowledge may depend on maintaining an influx of the naive and ignorant, and that competitive victory does not reliably go to the properly educated.

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