Institutional Effects on Skill Creation: A Comparison of Management Development in the U.S. and Germany

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ABSTRACT

Changes in requirements for competitive success in the global economy have led political economists to devote greater attention to shifts in corporate strategy and differences in education and training, primarily for production workers, across the industrialized countries. This project seeks to fill a key gap in this research by linking issues of skill creation with corporate restructuring through a focus on how company managers develop their skills. Comparing the U.S. and Germany, we show that differences in national and regional institutions have a powerful impact on management development. We focus on four main types of institutional structures in each country: education and training providers, intermediate institutions (e.g. employer organizations), the state and internal company organization. We conclude that Germany's strong intermediate institutions enable it to solve potential market failure problems for certain skills -- e.g. the training of front-line supervisors and managers within small firms -- but that the over-regulation and heavy dependence of universities on state funding at universities has discouraged innovation in management education, while the organization of skill development within firms has made it difficult to develop many managers' cross-functional skills. The U.S., with its more market-based approach to management development, has the opposite outcomes.

INTRODUCTION

Political economists are devoting greater attention to issues of skill development and corporate restructuring (e.g. Streeck, 1989; Finegold and Soskice, 1988; Pontusson and Swensen, 1994; Locke and Dooley, 1995). The shift from a focus on inflation and the welfare state to education and training and economic competitiveness reflects the profound shifts that have taken place in the global economy in the last decade. The combination of growing interdependence of national economies, the emergence of new, low-cost but relatively high-quality competitors, and rapid technological change has led many to conclude that the only way for the advanced industrial countries (AICs) to maintain or improve their standard of living is to raise the skill levels of their citizens (e.g. Reich, 1991). Likewise, education and training are seen as one of the main solutions to the growth in wage inequality that characterized many of the AICs in the 1980s and early 1990s (OECD, 1994).

Most of the comparative work by new institutionalists on skill issues has focused on the relative success of different national or regional vocational education and training systems at producing craft and technical skills (e.g. Soskice, 1991; Ryan, 1991). These intermediate skills are seen as an essential component for introducing flexible production regimes.[1] Interestingly, there has been relatively little research on the skills of the individuals responsible for designing and implementing workplace restructuring: company managers. This paper is an attempt to start to fill that gap, focusing on how national institutional structures shape different models of management development in the U.S. and Germany.

We have adopted a broad definition of "management development". By "manager," we mean any individual who oversees other employees, from front-line supervisors to chief executives, while "skill development" includes activities beyond formal education and training, such as planned job rotation. Our focus is thus broader than most previous comparative studies of management development which have tended to confine themselves to top managers and university or MBA courses (e.g. Inquiry into Management Education, 1982; Handy, 1987). For example, we include the major contribution that two-year colleges and firm-based training make to management development in our analysis.

The paper is structured as follows: we first outline the conceptual framework that was used to structure our analysis and our research methods. We then present descriptions of the main models of management development in the U.S. and Germany, and examine the changes taking place in the global economy that are posing major new challenges for managers and education and training providers. Finally, we draw conclusions regarding the success of the different in coping with new demands.

To preview our main findings: the German system of management development has insured most managers enter the workforce with a strong educational foundation. The internal structure of large companies -- which are the main source of ongoing management development -- has tended to restrict sustained training efforts to an elite group of managers and placed an emphasis on functional specialization that may be ill-suited to the new competitive climate. In contrast, the U.S. places less emphasis on initial educational qualifications, although most managers now have at least a university degree. Intense competition among public and private business schools in the U.S., however, has

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[1] Among the different labels for these high-skill production environments are: "lean production" (Womack et al., 1990); "diversified quality production" (Streeck, 1989); "flexible specialization" (Piore and Sabel, 1984); and "high-skill equilibrium" (Finegold and Soskice, 1988).

produced global leadership in graduate management education and research. And the flexible internal structures of leading U.S. corporations have enabled them to adapt training programs to more decentralized, leaner organizations by promoting cross-functional skills among all managers. The reliance on the market has led to greater variation in the quality and quantity of U.S. management development for supervisors and in small firms, but some states and firms have developed creative mechanisms for financing these investments.

CONCEPTUAL FRAMEWORK

This study seeks to identify and compare the different models of management development in Germany and the U.S.. A model of management development maps *a main route through which individuals acquire their managerial skills*. Each management development model has a number of dimensions:

- Who receives training
- Who provides the training
- What types of skills are produced
- Who pays for the training
- What role, if any, the government plays

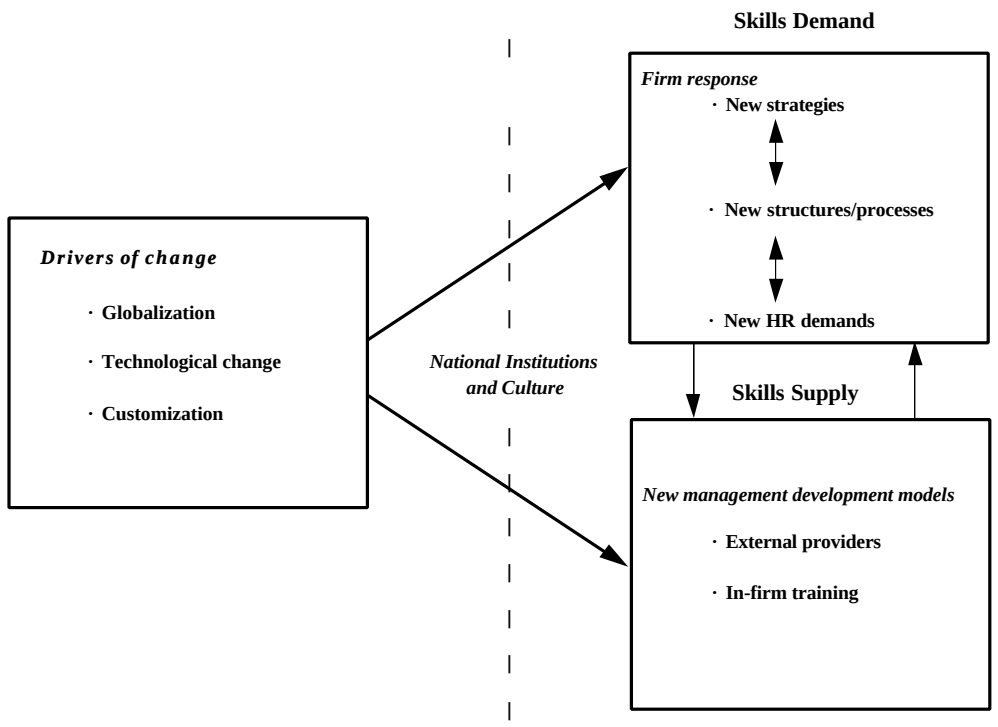
Each country has more than one management development model, although one route (e.g., internal company training following a general university degree in large Japanese firms) may be dominant.[2] The models are not intended to be mutually exclusive. In the course of their lives, individuals may pass through several different routes of management development, starting in a large company's management training program and then leaving to get an MBA and start their own business. Two advantages to concentrating on management development models are: first, it acknowledges the wide diversity of managerial jobs and skill needs, with some forms of management development perhaps more appropriate for certain sectors, firm sizes, or occupations. Second, organizing the complex reality of management development into models and then analyzing how they vary across countries and along the above dimensions makes it easier to identify lessons that can be transferred across national borders.

In a rapidly changing business environment, it is crucial to incorporate a dynamic component into any analysis of management development. Thus, our conceptual framework begins by identifying the different management development models that evolved through the mid-1980s and then focuses on how these models have been adapting to changing competitive conditions in the last decade (see Figure 1).

There are a set of common forces (e.g., globalization of the economy, technological change) that are driving changes in management development in all of the industrialized countries. How each nation responds to these external pressures, however, will in part be

[2]Often the "20:80 rule" is apparent in a particular industry or among external providers--i.e., the top 20 percent of firms will provide the vast majority of management training for their sector or the top 20 percent of universities/business schools will train most of a country's leading managers.

Figure 1 - Conceptual Framework: Changing Supply and Demand for Managerial Skills



determined by its institutions and culture and the pre-existing models of management development. Managers in Japanese, German, and U.S. firms, for example, may each respond differently to a recession with American companies generally quicker to lay off managers and workers and cut back on training expenditures. National and regional institutions create capacities and impose constraints that can have important effects on individuals' and firms' decisions regarding management development -- e.g. employer organizations or other intermediate institutions may facilitate management development in small firms that would not occur in a free market. Or excessive state regulation and/or lack of financial incentives may slow the pace of innovation among public education providers in response to new demands on managers. We focus on four main types of institutional structures in each country that are most relevant to management development: education and training providers, internal company structures and practices, intermediate institutions (e.g. employer organizations) and the state.

External forces can have both direct effects on the institutions responsible for management development (e.g., the use of new technologies to train managers or a recession that cuts available funds) and indirect effects, as firms adapt their strategies, structures and human resources policies to the changing conditions, leading to different skill demands on managers: e.g. combining analytic and interpersonal skills, lifelong learning, foreign experience. Providers of managerial education and training will often act as a transmission mechanism for new management practices, modifying their courses in response to changes in skill demands from leading firms, and then producing managers who help bring about changes in other organizations.

METHODS

To collect the data for this study we used the above conceptual framework to develop a set of semi-structured interview protocols that were pilot tested in both countries and then refined.[3] The sample for the interviews was the main providers of management development in each nation: education and training institutions (both public and private) and companies. We also interviewed relevant professional organizations, policy makers, and experts in management development.[4]

For each country we identified a sample of companies that met the following criteria:

- Participate in the global economy (including through exports or servicing international customers)
- A mixture of large and small (fewer than 100 employees) operations
- Represent best practices in management development (as identified by peers or our review of the management literature)
- Three manufacturing (food processing, precision engineering, electronics) and three service (hotels, banks, business services) sector enterprises.[5]

Within each organization, we tried to interview more than one individual to get different perspectives (i.e., human resource versus production managers, teachers versus administrators) on the issues of management development. In addition to the more open-ended questions, we asked respondents to rate ten trends that are now affecting and will continue to affect business management into the next century. [6] Each trend was ranked on a scale from 1 (not very important) to 5 (very important). Respondents were then asked to explain why they weighted one trend as more significant than another, and to comment on any other important trends the survey did not address.

In all we conducted 50 interviews in the U.S. (29 with education providers and 21 with company managers) and 39 interviews in Germany (21 with education providers and management experts and 18 with firm managers).[7] We supplemented the interviews with reviews of the relevant literature and the national and international data available on management development.

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[3]Because of the short timeframe for the study, the pilot tests were conducted with firms and education and training providers in the Los Angeles area, near RAND, and in Germany to check that the questions would make sense outside of the U.S.

[4]With only one exception, the interviews were conducted in the native language of the respondent and then translated, if necessary, into English.

[5]These sectors were chosen because of their relative importance to the Australian economy.

[6]This list of trends was adapted from a similar ratings exercise that had been validated in earlier RAND research on *Global Preparedness and Human Resources: College and Corporate Perspectives* (Bikson and Law, 1993). In the course of the literature review we checked this list against other trends from relevant research and added categories (e.g. environment) to the ratings.

[7]Some respondents preferred not to fill in a ratings sheet or submitted only one for the entire organization. The distribution of interviews was relatively the same between the ratings sheets and overall interviews. The number of completed rating sheets for each institution type is provided with the figures.

MANAGEMENT DEVELOPMENT MODELS

The study revealed, as expected, a wide diversity of management development models both across and within countries. Below we will compare the main routes through which managers acquire their skills in Germany and the U.S., beginning with the initial education and qualifications of managers, then analyzing the extent of external, further opportunities for skill development, both outside and within firms. Finally, we will look at the role which the state and intermediate institutions play in facilitating certain forms of management development.

Initial Education of Managers - Germany

There is a rich set of institutions in Germany involved in providing and certifying managerial skills. Universities and *Fachhochschulen*, private educational providers, as well as public and quasi-public agencies all play a role in insuring that German managers from the top to the bottom of the employment hierarchy are technically well-prepared for their professional responsibilities.

It is the 90 universities and 125 *Fachhochschulen* in the Federal Republic of which act as the main training ground for the future managers of industry. The universities, with their long and academically-oriented coursework, are the traditional pillars of the German higher education system. Courses at the university can theoretically be completed in four to five years, but the oversubscription of many courses means that the average length of study is six to six and a half years. Given the late age (19 or 20) at which German students begin their higher education, the result is a relatively high average age upon graduation of 26 or 27. The majority of university students are engaged in technical and scientific pursuits, but there is also a sizable minority who complete their studies in the humanities and arts (see Table 1).

The *Fachhochschulen* were established in the 1960s to accommodate the growing numbers of students going on to higher education. As an alternative to the more academic university education, courses at the *Fachhochschulen* are shorter and more vocationally-oriented. Coursework is normally completed in three to four years of full-time study, and the average age of graduation is a correspondingly younger 24 or 25. Revealing the heavily professional orientation of the *Fachhochschulen*, nearly three-quarters of the students graduate in engineering or business administration.

The vocational orientation of the *Fachhochschulen* is reinforced through close contact to industry. Fully two-thirds of students at the *Fachhochschulen* , but only one-third of those studying at the university complete an apprenticeship before going on to higher education.[8] Company-based internships are, moreover, an integral element of the educational experience, with one or more internships of several months required during the period of study. A balance between theory and practice is also institutionalized in instruction. Professors as a rule had several years of hand-on experience in either industry or law, and recruiting of visiting professors and guest lecturers from firms is common practice.

[8]Most *Fachhochschulen* students took an apprenticeship instead of staying on in school to complete the Abitur, the academic upper secondary qualification, although a growing percentage now do both.

Table 1

German Graduates by Academic Discipline, 1991
(in thousands)

	University	Fachhochschule	Total
Language, Cultural Studies, Sport	13.2	1.0	14.2
Law, Economics, and Social Sciences	22.7	26.5	49.2
Mathematics and Natural Sciences	17.2	2.9	20.1
Engineering	11.8	24.5	36.3
Medicine	11.8	—	11.8
Agricultural	2.5	2.2	4.7
Arts	3.7	1.8	5.5
Total	83.0	58.9	141.9

SOURCE: Bundesministerium fur Bildung und Wissenschaft, Grund- und Struktur Daten, 1993/94.

Table 2

Educational Qualifications of German Managers, 1990
(in percentages)

	Managing Directors	First Level (Division Head)	Second Level (Department Head)
University	52%*	33%	21%
Polytechnic (economic studies)	7	8	8
Polytechnic (technical studies)	13	18	23
Abitur (upper secondary certificate)	9	8	5
Middle Exam	10	20	21
Other	9	13	22

SOURCE: Kienbaum und Partner, Compensation survey, 1990.
16% of managing directors have a doctorate in addition to their university degree.

Together, graduates of the universities and *Fachhochschulen* hold the majority of management positions at all levels, but with clear variation in the type of position held. While *Fachhochschule* graduates outnumber their university counterparts in the lower levels of management, accounting for 31 percent as compared to 21 percent of department heads, they are relatively underrepresented in the ranks of top management. More than half of managing director positions are held by university graduates, with only 20 percent of these positions falling to those from the *Fachhochschule* (see Table 2). The greater prestige of the university degree is also reflected by differences in starting salaries. The salary difference between those with *Fachhochschule* and university degrees averages 5 percent, but may in some positions climb to 15 percent of entry-level pay.

In recruiting from the university and *Fachhochschule*, German firms favor those with technical as opposed to purely theoretical training. Graduates in engineering, economics, and business administration are among the groups most highly recruited. Those students who combine university and traditional apprenticeship are highly sought after by companies for their mix of theoretical and practical training (see Table 3).

Differences in entry-level pay and upward mobility reflect a "prestige gap" between the universities and *Fachhochschulen*. That gap exists in part because of public policy decisions which actively maintain the "second-class" status of the *Fachhochschulen*. Universities, but not the *Fachhochschulen*, are legally entitled to award doctorates; professors at the *Fachhochschulen*, likewise, receive lower salaries than their university counterparts. Whether this prestige gap will continue over the coming years is, however, unclear. A broadly held perception among both policy makers and business people is that "university instruction is too long and theoretical and [that] university students are squandering educational resources," which puts the *Fachhochschulen* with their short, industry-oriented courses in an increasingly favorable light. The trend in educational policies of several of the large German states is to increase resources for the *Fachhochschulen*, with the goal of changing the present student ratio from 70/30 in favor of the universities to an equal 50/50 by the year 2000.

Variation by Firm Size and Sector

The importance of the different types of educational attainment for a management career varies considerably according to firm size and across economic sectors. Among the largest and most internationally active German companies, there is great respect for academic attainment.

Table 3

Academic Disciplines of Employed University and Polytechnic Graduates (percent)

	All		
	1983	1993*	Managing Directors
Engineering	43	43	35
Economics/Business Administration	35	38	44
Natural Sciences	11	12	10
Other	11	7	11

SOURCE: Institut der deutschen Wirtschaft—Firm Questionnaire, 1982; Kienbaum Compensation Survey, 1993.

*Projections to 1993.

Of the managing directors from the largest 100 German firms, close to 60 percent possess a doctorate in engineering, science, or law.[9] University graduates likewise enjoy a certain level of favoritism in the hiring and recruiting practices of large firms. They not only begin their employment with the previously mentioned salary advantage but are also more likely than *Fachhochschulen* graduates to find their way into the groups of "high potential" management recruits.

Fachhochschulen graduates are, on the other hand, coveted by firms in the German *Mittelstand*, the small- and medium-sized manufacturing enterprises that have accounted for much of the nation's export success. Typically operating on a tighter budget, these firms do not have the time nor the internal resources to bring the "high potential" university graduates up to speed. The *Fachhochschulen* trained engineers or economists are attractive to the small- or medium-sized firm because the practical orientation of their education allows them to dive right into work. Smaller manufacturing firms also rely on Meister courses, as these production supervisors work alongside

[9]Handy et al., 1986, report the number to be 56 percent in the mid-1980s. The expectation is that the figure has grown slightly since then.

Fachhochschule-trained engineers as typically the only level of management below that of the company owners.

An equally pronounced split in patterns of management recruiting and promotion is to be found between firms in the manufacturing sector and those in the services. Whereas in the traditional strongholds of German big business—in the chemical or auto industry—reaching top management is very difficult without a university degree and in some cases a doctorate, in the services sector it is only the large consulting firms which recruit exclusively from the ranks of graduates. Finding individuals with the *Fachwirt* or *Fachkaufleute* as their highest level of educational attainment in the ranks of top management is quite normal. Among the large banks, the service sector firms most thoroughly infiltrated by university graduates, only 25 percent of the managerial workforce and 50 percent of top managers are graduates. In the hotel and retail sectors, the number of graduates in the ranks of management is considerably smaller—hotels around 10 percent and retailers 5 percent.

Initial Education of Managers - U.S.

The quantity of education in the U.S. is impressive, even if the quality of some educational programs, notably the high school diploma, is highly variable by international standards (Handy, 1987). More than 80 percent of the adult population (aged 25-64) has a high school diploma or equivalent certificate, and nearly two-thirds of young adults aged 20-24 in the U.S. enroll in a community college, college, or university. (World Competitiveness Report, 1993). The high levels of education of the U.S. population (aged 25-64) compared with those of other industrialized countries is presented in Table 4.

Eighty-five percent of all U.S. employees have at least a high school diploma, whereas among the ranks of persons who classify themselves as managers and professionals, 96 percent have high school diplomas and 47 percent have at least undergraduate degrees (U.S. Census of Population, 1990). Table 5 presents the 1991 percentages of managers and professionals and general employees who have achieved certain highest levels of educational attainment across all industries. There is wide variation across business sectors. For example, in financial services, 52 percent of managers have college degrees, whereas in construction sector, only 26 percent of managers have degrees.

The U.S. had the first mass higher education system in the world and the number of graduates has risen steadily (to 1 million in 1991) since the end of World War II. This is due in part to large state subsidies of public two and four year colleges which allow them to remain affordable options for most Americans. Among American college students, business administration remains the most popular subject concentration; nearly one quarter of all students major in business, an option which grew in popularity throughout the 1980's (National Center for Education Statistics, 1991). Additionally, students majoring in business are more likely to graduate than their liberal arts counterparts, according to a career placement officer at a major university. American young people, who have to self-finance a larger portion of their higher education than do their European counterparts, place an emphasis on acquiring practical,

Table 4

Population Percent Completing Different Levels of Education

	U.S.A.	OECD Average
Early childhood (K-8)	17	45
Upper secondary (9-12; high school)	47	36
Higher education (university and other)	36	19
Total	100	100

SOURCE: Education at a Glance, 1993 Organization for Economic Cooperation and Development (OECD) Indicators

Table 5

Percentage of All U.S. Workers and Managers Completing Different Levels of Education

	High School Dropout	High School Graduate	Some College	College Graduate	Post Graduate	All Levels
Managerial/ Professional	4	26	23	30	17	100
All others	17	47	22	10	4	100
Total Workforce	15	44	22	13	6	100

NOTE: Managers and professionals represent 17% of the total working population.
SOURCE: Census of Population Survey, 1991.

marketable skills while in college. As the same career placement officer explained, "The kids now are already thinking about finding jobs when they graduate. If it isn't going to help them get and keep a good job, they don't want to bother, and they switch or leave."

In American business, demonstrated ability counts for more than academic credentials, but increasingly, American managers believe the two are connected. Thus, almost all American managers in large organizations now start their careers with a degree (usually business or technical), which they later augment with further management study and/or an MBA. Of the six sectors studied, only hotel managers did not think a university degree was an important entry characteristic or a prerequisite for promotion beyond a certain level. The other exception to the rule of degreed managers is at start-up firms, where entrepreneurs often see no payoff from formal higher education.

Further Management Training Courses - Germany

Though university and *Fachhochschule* graduates account for the majority of German managers, there is a sizable minority who have not been through higher education. A look back at Table 2 shows non-graduates to be well-represented at all levels of management, accounting for half of the department heads, over 40 percent of the division heads, and some 30 percent of the managing directors. For the non-graduates, entry into management is normally contingent upon achieving a second level of vocational qualification. Referred to as *Aufstiegsweiterbildung* (literally, promotion-oriented further training), this second level of vocational qualification is

represented by the *Meister* certificate in industry and the *Fachwirt* or *Fachkaufleute* certificates in services. Each type of course builds upon the completion of an apprenticeship and three to five years of work experience to allow the skilled worker to qualify him or herself for management.

Every year thousands of individuals complete *Meister*, *Fachwirt*, and *Fachkaufleute* courses and the associated exams in a broad range of disciplines across all industrial and commercial sectors (see Table 4). For each type of further training, classroom instruction is offered in the evenings or on weekends and meant to accompany continued work, with the goal of achieving a tight integration of theory and practice. The courses involve between 500–900 hours of classroom-based instruction, spread out over a two- to three-year period. Costs of instruction range from 2500–4000 DM ($1,500–$2,500) for the *Fachwirt* and *Fachkaufleute* classes and from 4500–6000 DM ($2,800–$3,500) for the *Meister* classes, and are in most cases paid by the employing firm. All courses end with a final certifying exam before one of the nation's 83 Chambers of Commerce and Industry.

Despite the similarities in structure of courses, similarities that lend themselves to the general classification of *Aufstiegsweiterbildung*, each plays a very different role in Germany's system of management education. Of the three, it is *Fachwirt* courses that have the strongest claim to being truly management education. Each of the courses coming under this heading is designed to cover subjects needed to prepare an individual for an eventual move into a mid- to upper-level business management position. Instruction covers general economics, business administration, accounting, and finance, as well as sector specific product knowledge and sector specific applications of information technology. For those without a university degree, the advanced vocational degree in commerce is often—especially in larger commercial firms—considered a prerequisite for the move into management. After successfully completing the *Fachwirt* exam, individuals typically take over responsibility for a small business unit within a larger commercial firms, e.g., a bank's branch office, the purchasing group within a department store, or marketing group for a single hotel in a chain. Later, opportunities for movement into higher levels of management for *Fachwirt* graduates, including top management, are also abundant.

The analog to the *Fachwirt* in industry, the *Meister* courses, are designed to prepare the skilled manufacturing worker to take over a leadership position in production. Just over half of instruction is devoted to deepening technical knowledge and understanding of manufacturing processes. Technical training is complemented with courses in business administration, along with instruction in pedagogical and organizational issues. *Meisters* not only supervise other employees and organize production, but also play a critical role in continuous skill formation on the shop floor. It is these individuals that oversee the training of apprentices.

For those that have successfully completed a *Meister* course, opportunities for upward mobility are considerably more limited than for their counterparts in services. The technical nature of the training is somewhat distant from the business issues that concern general management, making the cross-over from shop-floor production normally affords these individuals a wide area of responsibility and decision-making power. In the relatively flat employment hierarchy of the small- or medium-sized firm, the *Meister* is on the same level of the employment hierarchy as the managers of other functional departments—sales, personnel, or quality control—many of whom are graduates of the university or *Fachhochschule*. The same goes for large firms that have moved toward "leaner" management structures. Organizational flattening, which normally means removing the production managers to take out an intermediate step between shop-floor supervisors and general management, results in putting the *Meister* again on the same level as other department heads.

The final type of further training, the *Fachkaufleute* certificate, is a typical qualification of lower to middle management in both industry and commerce. Coursework associated with this type of vocational qualification is meant to deepen skills and knowledge in administrative function common to firms in both services and manufacturing. The most important courses focus on accounting, marketing, or manufacturing. The most important courses focus on accounting,

marketing, or logistics. Attaining the *Fachkaufleute* qualification can be expected to facilitate the move into the first-line management of the appropriate functional division. Opportunities for continued upward mobility depend to some measure on how much emphasis the firm or sector in question places on degree-level qualifications, but are available.

Further Management Training Courses - U.S.

The U.S. does not have a highly structured system of training for supervisors and other individuals making the transition to management equivalent to the German *Aufstiegsweiterbildung*. The quantity and quality of management development for this group is thus far more variable, with some individuals receiving no formal management development, while others undertake extensive, ongoing training. The most common approach to further training is short, externally-provided courses that individuals or firms purchase in the training marketplace when they have a perceived skill need. Each course usually focuses on a particular issue or skill set, some of which may be industry-specific and others which may be general. For example, bankers take short courses on subjects such as credit analysis and securities-backed financing. Other courses, such as presentation skills and quality assurance may be applicable across industries.

Courses last anywhere from a day to two weeks, with costs ranging from $100 for a day-long community college seminar to $15,000 for an executive seminar offered through a business school. To help individuals who take these courses in their own time a large number of U.S. employers, including many small firms, now offer some form of tuition reimbursement to their employees (Finegold and Mason, 1995). In the public transportation industry, for example, 61 percent of all agencies offer tuition reimbursement to supervisors and 55 percent offer it to mechanics (Finegold et al., 1995).

The most popular venues for these courses are community colleges, universities, and private providers. Colleges offer the courses through their professional development centers or executive education departments of business schools. They usually contract with professors or professional consultants to teach the classes. Private providers vary a great deal in their size and focus. For example, we interviewed a small (17 employees) private training company which caters solely to mid to large commercial banks. Its teachers are all direct employees of the firm. By contrast, the American Management Association (AMA) is the largest and oldest private provider of management seminars in the world. Founded in 1923, the AMA has over 70,000 members, all of whom are business managers. The AMA offers two types of short seminars, 3-5 day courses targeted at mid-level managers and 1-2 day courses targeted at office administrators and supervisors. The AMA contracts with independent consultants to teach the courses. The breadth of subjects offered in AMA seminars covers every area of management, both general and industry-specific, and technical and "soft" subjects. For example, in the last year AMA has offered courses on ISO 9000 quality standards, workforce diversity, power speaking, inventory management, and increasing customer satisfaction. In confirmation of the growing role rapid technological change is playing in business, AMA representatives identified seminars such as "dealing with information technology" as one of the most popular domains of the past year.

There appears to be a strong preference in the U.S. for courses taught by business practitioners rather than representatives of academia. David Fagiano, President of the AMA, said that although "university types" were well-received in AMA European seminars, that having professors teach AMA classes in the U.S. was "the kiss of death". Likewise, Jerry Kramer, President of Globecon, another private training firm, said that one of Globecon's strengths was that it hired only former bankers as teachers, which made marketing their courses easier.

Graduate Management Education - U.S.

In contrast to the scattered approach to further training for lower level managers, the U.S. has a highly developed model of further management development for top mangers -- the MBA.

While only 10-12% of all managers in business have MBAs, 35 percent of chief executives of America's largest 500 companies possess them. The MBA originated in the United States in the late nineteenth century. Until the Wharton School of Business was founded at the University of Pennsylvania in 1881, business education in the U.S. had been the province of technical schools and commercial colleges. The MBA gained in prestige in the early twentieth century as world-renowned institutions such as Harvard and Stanford added graduate business schools.

By the mid twentieth century, the "classic" MBA, with its full-time, two year curriculum of management, accounting, finance, and operations and emphasis on quantitative analysis, was well established. The average student worked 2-3 years before seeking an MBA, and the goal of the MBA was to produce a new breed of general manager, educated to a graduate level in all aspects of running a business. Still MBAs were relatively rare, with only 4500 awarded in 1956; just nine schools accounted for more than half of all the degrees awarded. (Harvard and New York University alone accounted for 25 percent). The growth in the popularity of MBAs since then has been explosive, particularly throughout the 1970s and 1980s. In 1991, over 78,000 MBAs were awarded by over 700 American business schools. (See Figure 18 in the main report.)

The recession of the early 1990s slowed the growth in MBAs for the first time.[10] The most recent national education statistics only record degrees conferred through 1991, and do not show a drop-off in the number of MBAs awarded, but the number of persons taking the Graduate Management Admissions Test (GMAT), which is the standard entrance exam for MBA applicants, declined in 1990-93 (See Figure 2.)

Along with declining demand from individuals, there have been increasing complaints from companies about the usefulness of MBAs. Until fairly recently, "classic" American business education emphasized analytics and finance and was U.S.-centric in its focus This traditional education system has been criticized as being short-sighted and inadequate to meet the increased pressures on businesses today. A new set of business competencies is augmenting (but not replacing) the old: foreign language skills, familiarity with other cultures, computer literacy, and firm-based team projects, for example, are important additions to business school curricula. Critics charge that business schools have not adapted quickly enough to these changes in the duties and career structures of managers. (*The Economist*, 1991).

Many of the top-tier MBA programs are not just teaching their students about reengineering, they are reengineering themselves. Most of these reforms are still in their early phases. The more prominent changes include a greater emphasis on teamwork and firm-based learning, greater international experience and use of new technologies. The traditional MBA model and the new techniques which the top-tier business schools are adapting were presented in the main report. They are repeated here for the reader's convenience as Table 6.

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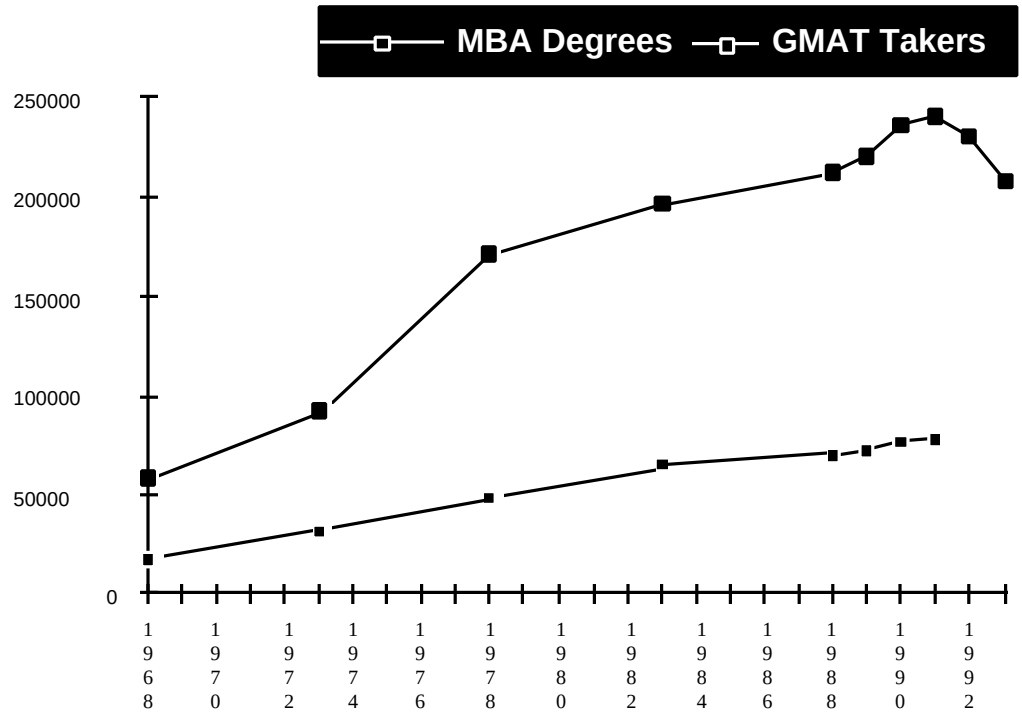
[10] After falling for several years, however, the applications to the top business schools showed record increases in the 1994-95 academic year.

Figure 2 - Drop in Demand for MBAs in the Early 1990s



Another notable feature of changing MBA programs is the increase in the average age and work experience of incoming students. The average starting age for full-time MBA students was 24-25 ten years ago; now it is 27. Business school officials and firms who hire MBA graduates agree that more work experience (and greater maturity) make the MBA a more valuable academic experience. Finally, many of the MBA programs, especially at the public universities, have developed part-time MBA programs which are increasingly popular alternatives to their full-time brethren.

The business schools in our sample had experienced no drop in demand for their smaller part-time MBA programs, FMBA (Fully-Employed MBA) and EMBA (Executive MBA), while full-time numbers dropped sharply. These programs offer similar coursework to the full-time programs but over a longer time frame. Students meet nights and weekends for their classes while working during the week. Unlike full-time MBAs, firms, rather than the individuals themselves, often pay the tuition and related costs.

Despite the recent problems, there was general optimism that the MBA will survive and remain an asset prized by both the immediate customer (the students) and the ultimate customers (the corporations hiring them.) The top U.S. business schools continue to receive many applicants per place, including large numbers of international candidates. And, business schools

Table 6

Changes Underway in U.S. MBA Programs

Traditional Model	**New Model**
Few courses	Diversify provision
Classroom-based	"Apprenticeship"
Theoretical	Real-world cases
Finance, quantitative focus	Analytic and soft/people skills
Functional separation	Cross-functional
Faculty Focus on research	Balance research & teaching emphasis
U.S.-centric	International
Individualistic/competitive	Group/cooperative
Male-dominated student body	Diverse (women, minorities) student body
Early in career	Lifelong learning
Traditional lectures	Use of new technologies

NOTE: New model somewhat analogous to medical schools.

remain a popular recruiting place for consulting firms, banks, and other major industries. When asked why business schools were considered the best source for new recruits, one consultant responded, "because it's a great screen. People with the attributes and skills we need are concentrated in the top ten schools."

Graduate Management Education - Germany

With opportunities to study business administration (*Betriebswirtschaft*) at both the universities and *Fachhochschule* plentiful, the American-style MBA has traditionally played no role in German management training. As late as the end of the 1980s, no German educational institution offered the degree, and it was very rare for German students to pursue an M.B.A. in a foreign school. Since 1990, demand for the M.B.A. degree has, however, expanded rapidly. There are now close to 15 public and private educational institutions offering one- to two-year M.B.A. programs,[11] and between 600–800 German students take the M.B.A. degree each year, with approximately half of those degrees earned abroad (Haller, 1993). The international orientation of the degree is a key to explaining the rapid growth in interest in the M.B.A. (Schneider, 1993). As at the private business universities, courses in international management topics and opportunities to study at sister schools abroad form core elements of most German M.B.A. programs and set the M.B.A. apart from the normal business administration courses found at the universities and *Fachhochschulen*.

A few select, private universities are most highly regarded for their instruction in this area. The Koblenz School of Corporate Management, the European School of Management in Berlin, and the European Business School in Oestrich-Winkel are similar to their public counterparts in offering a number of different final degrees in the area of business administration. They are different from the public universities in that their business administration courses are developed in

[11]An M.B.A. is still not an officially recognized educational degree in the Federal Republic, and thus M.B.A. titles cannot be awarded by German educational institutions. The Masters in Business Administration has thus been awarded in conjunction with a sister school abroad or by renaming M.B.A.-style courses, i.e., with case studies, team projects, and company internships, with such titles as Masters in International Business.

the context of international business, with topics like international marketing, finance, and personnel management making up the core elements of instruction. Coursework on international business themes is also complemented with periods spent studying and completing company-based internships abroad.

In-House Management Development - Germany

In comparison to the sophisticated system of management education, firm-based management development in Germany can only be described as weak. Rather than developing managerial skills internally, German firms rely heavily on external institutions of management training, both the universities and the *Aufstiegsweiterbildung* courses. As one management recruiter put it, "we expect [applicants] to bring their certificates with them.....[and] that possession of these certificates attained through a long course of training will allow them to get on with the job."

What this means for the great majority of German managers is that development efforts are minimal. One survey of over 800 large- and medium-estimated that German managers spend three to five days per year on further training in courses mainly devoted to "soft" management themes like motivation and communication. The survey also found that of business enterprises in the member states of the European Community (EC), those in Germany were the least likely to use systematic job rotation or periods spent abroad as tools of management development. A mere 7 percent of German firms used employment abroad as part of their personnel development, putting German industry last in the EC and considerably below the Community average of 17 percent. Only 12 percent of German firm respondents had job rotation programs, again a figure well below the Community average of 25 percent (Guagler and Witz, 1993).

The comparative neglect of management development by German industry is confirmed by other studies. One recent survey of German and British middle managers showed a strong pattern of functional management in German firms. Of the 30 German managers surveyed, all but one had stayed in the same functional area during the entire period with his present employer. Twenty of the managers had been in the same position for more than five years, and twelve of them more than ten years (Stewart, forthcoming). Another comparison of the career patterns of German and Japanese managers suggested that ten times as many Japanese managers had made rotations through Germany as German managers through Japan.[12]

Opportunities for sustained investment in management development are open to only a very small and elite group of the managerial workforce in large firms. The guiding idea behind these programs is to identify a group of "high potential" management candidates, and intensively cultivate the next generation of top managers. As one executive stated, "it is these individuals who will make the organization prosper, and so cultivating their leadership and business skills is a highest priority." High potential programs typically consist of two elements. The first is job rotation through different functional departments, product divisions, and international operations. Switching employment positions frequently, with most firms expect rotation every three to five years, allows the "top manager in training" to not only develop a sense for the company's overall business, but also to demonstrate a high level of initiative and commitment to the firm. Among all large firms interviewed, periods spent working abroad were considered particularly critical to develop the skills and flexibility needed for top management.

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[12]In presentation to the *Deutsch-Japanischer Wirtschaftskreis* in Dusseldorf, a Japanese manager put the comparative figures at 40,000 and 4,000. An official of the *Wirtschaftskreis* said that "exact figures cannot be verified, but that there were certainly many more Japanese managers coming to Germany than the reverse."

Complementing job rotation for the elite group is considerable further training. "The purpose of further training," said one developer, "is to take the normal manager and turn him [or her] into an entrepreneur and business leader." It is typically only the high potential candidates that attend training seminars in subjects other than "soft management" themes, such as communication and group dynamics. Ongoing training for these individuals also includes topics like entrepreneurship and strategic management, as well as international marketing and personnel management. Participation in external executive education seminars at such notable providers as the German Universitätsseminar der Wirtschaft (USW), Europe's top business school. INSEAD, and the Harvard Business School also play a role in the training of top managers. For some firms, the external seminars are considered very important, expected to stimulate creativity by giving top managers distance from the organization and putting them in contact with other business leaders. For other firms, the external seminars are considered too highly priced to be cost effective.

In size and degree of formalization, the high potential programs vary somewhat from industry to industry. Among large banks and producers of sophisticated manufacturing goods e.g., electronics, the high potential pool was found to be the largest, representing close to 10 percent of the total number of managers. These firms also had a relatively high degree of structure in their further training, with clearly laid out programs of further training accompanying upward mobility. Among hotels and less sophisticated manufacturers, e.g., food processing, the development programs were found to be smaller, including 1–3 percent of the management workforce, and further training programs were less formal.

In-House Training - U.S.

In-company training, both formal and especially informal, is the most common mode of management development in the United States. It is also the mode of skill development considered most practical, as proficiencies learned in pre-employment settings are applied and new competencies are developed as necessary. U.S. employers spend over $40 billion each year on additional training. Roughly twenty percent of that total is spent on management training (Fuchsberg, 1993). Lillard and Tan (1986) showed that the likelihood of getting formal on-the-job training and the amount of that training rise with the level of schooling attainment, with the exception of the most educated workers, postgraduates. Furthermore, the likelihood of training rises with time on the job (Lillard and Tan, 1986).

Formal training is most common at the onset of employment in a large firm, when a professional or new manager is likely to enter a structural development program that includes some classwork and systematic job rotations. After these formal initiations, which last anywhere from six months to two years, in-company training becomes less programmatic and more individualized. Large companies increasingly have a section of their annual performance assessments that includes training needs, whereby a professional and his supervisor decide what skills the employee needs to develop and how best to develop them. The development plan resulting from this process may include specific new responsibilities, course attendance, and rotations in different departments or divisions. Also, provision of certain seminars or courses is often standard when a manager reaches certain levels or is assigned to certain departments. For example, Marriott sends most senior executives to leadership workshops run by a consultancy.

Company Education Units

A small but growing number of large firms have formalized in-company training and made major financial commitments in establishing firm-focused, firm-sponsored "company schools". Firms such as Motorola, General Electric, and Xerox have developed autonomous business units whose primary function is to meet the ambitious continuos education requirements of *all* the employees of the firm and its suppliers

This new model is a hybrid between customized training, company-based training, and external short courses (geared to the individual), being closer in mission to customized training. It combines the goal of customized training, which is to use education to meet specific strategic goals or achieve organizational transformation, with a strong, ongoing commitment to professional development and the establishment of resources dedicated to keeping that commitment. Because of the level of resources required to implement and sustain this model, it is limited in use to very large companies.

This model does not require the construction of a corporate college campus. Motorola University (MU), arguably the most well-known example of this model, is more of a planner and contractor than a training provider. The mission of MU is simple: it is to provide the means by which Motorola's 120,000 employees, worldwide, can continuously upgrade their skills. To deliver this mission, MU has units at various corporate locations, sometimes forming partnerships with local colleges to deliver courses. For example, classes at MU's western division are administered by Mesa Community College, which screens and hires course instructors, provides classrooms and support services, and administers course registration. By charter, MU only develops its own courses if the subject is not obtainable through a local college or private provider or it requires discussion of proprietary information.

Likewise, Boeing has established a training division which develops its own coursework in key topics, such as statistical process control, then trains and contracts with various colleges around the country to deliver these courses to its employees and the employees of its suppliers.

Motorola finds that the benefits provided by MU outweigh its costs, despite having spent over $100 million on training in 1992. First, MU courses provide opportunity to continually restate strategic objectives such as quality improvement, cycle time reduction, and technology leadership, aimed at achieving total customer satisfaction. Second, MU can respond to changing objectives much more quickly and cohesively than through other educational means. Arnie Sabel, manager of MU West, estimates that about 70 percent of the courses have been changed since the program started eight years ago. The slower pace at which many universities worldwide have responded to the changing business environment is thus notably absent in Company Education Units such as MU.

THE STATE'S ROLE IN MANAGEMENT DEVELOPMENT

To this point we have not explicitly discussed what role--if any--government plays or should play in helping to improve the capacities of managers. In theory, the economic justification for state action is that the market, if left untouched, will fail to provide an optimum quantity of some service. This could be the result of a market failure (e.g., imperfect information or inadequate access to capital) or because the social returns to an investment are greater than the private returns.

In reality, the state has taken a major role in management development in both countries more from historical accident than any strong case of market failure or public good in the education and training of managers. Publicly-funded colleges and universities are the principal providers of higher education in these countries, like the rest of the OECD. As the demand for management education from individuals and companies grew following World War II, public colleges and universities responded by developing a wide variety of courses ranging from undergraduate

diplomas and degrees to executive MBAs and short, non-credit modules tailored to specific skill needs.

Given this large existing state role, one of our study's most striking findings was the near universal opposition to any direct state role in management development. While this opposition might have been expected from company managers and individuals in the U.S. where government has traditionally been distant from the private sector, more surprising was that the hostility to state intervention was equally strong among education and training providers and in Germany, where over 90 percent of respondents did not see a role for the state in the initial or further training of managers.

The most frequently cited reasons for why the state is not the most effective provider of management development were:

- Public institutions are slow to adapt
- Companies are in the best position to determine new managerial demands and train for them
- Managers learn best in "real world" situations
- The returns to management development accrue to the firm and the individual, and therefore it should be financed by them, not the taxpayer

Some respondents went further, arguing that government involvement in management development could actually be counter-productive:

- Subsidies for public institutions discourage the development of private providers and healthy competition
- Individuals who do not have to pay for management education (as is the case in many publicly-funded higher education systems) may not treat it as an investment nor be sufficiently motivated.

Beneath the broad antagonism to direct government involvement in management development, however, was a recognition that there are a number of indirect, yet important ways in which the state contributes to the education and training of managers. Most notable of these is providing individuals who become managers with a solid educational foundation on which to build more specific and ever-changing skills. Nearly every respondent indicated that given limited resources government's first priority should be insuring a high quality basic education for all citizens. [13] It is the general education level of the population, rather than specific managerial skills, that accounts for the high ratings which leading corporate executives give Denmark and Ireland when assessing which nation's provide the best human resources for their companies (IMD, 1993).

There was more disagreement over how directly the state should be involved in vocational training and higher education. In the U.S., many commented that training for technical and supervisory skills was underprovided relative to universities. There was strong support for continued state funding of basic research. Otherwise respondents indicated that the state should intervene less, rather than more in post-secondary education, and should strive to foster competition among providers. In Germany, where the state controls which institutions can provide degrees in management, this bureaucracy was generally cited as the largest barrier to innovation in management development.

Once individuals have entered employment, there was widespread agreement that the primary responsibility for management development lies with them and their firms. Small and medium-sized enterprises (SMEs), however, generally lack the resources to create and run internal

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[13] Even for basic schooling, several respondents (particularly in the U.S.) advocated that the state encourage greater competition among public and private providers, shifting to a focus on overseeing and funding *the system*, rather than the traditional role of monopoly *provider*.

development programs. Thus, in both countries, external forms of support have been developed to aid SMEs and their workforce in skill development.

External Support for Management Development- Germany

In Germany, SMEs derive considerable benefit from two quasi-public organizations active in the field of management development. The first are the Chambers of Commerce. It is these bodies that are responsible for organizing the *Meister* and other *Aufstiegsweiterbildung* courses which, as suggested, play an important role in meeting the management skill needs of the smaller German business enterprises.

The second type of quasi-public organization is the Rationalization Committee of German Industry (RKW), which since its founding in 1923 has focused on assisting economic rationalization and structural adjustment in the German economy with particular attention to the needs of small- and medium-sized manufacturing firms. Through its central office in Frankfurt and regional offices in each of the Federal states, the RKW offers a range of services oriented toward supporting innovative management in the German *Mittelstand*. One service is ongoing training courses in the area of management education. A second is on-site consulting in the areas of organization flexibility, implementing new technology, and controlling. In 1992, the RKW logged some 43,500 days of consulting work in just over 6,000 different firms (RKW *Jahresbericht*, 1992). A final service offered by the RKW is the publication of books and expert reports on themes related to the management of innovation. Drawing on the expertise of business practitioners, university professors, and other management experts, the RKW produces 25–30 publications each year covering innovations in technology, organization, and personnel.

The benefits of the Chambers' and the RKW's activities to the small- and medium-sized firms are two-fold. The most obvious is the increased availability of management training and consulting. Because of public subsidies to both types of organizations, these services can be obtained by the SME at a price as much as one-third below market value. Less obvious, but perhaps more important, is the role both organizations play in diffusing innovative management techniques. For the RKW, extensive involvement with small business enterprises permits a steady accumulation of knowledge about evolving management practices, knowledge which in turn can be diffused through consulting and publishing activities. The Chambers' involvement in *Aufstiegsweiterbildung* leads to extensive interaction with both large and small firms, contact which allows for the accumulation of expertise which again can be diffused.

Private training providers connected to employer's organizations also play a role in supporting the management development efforts of SMEs. These providers are of two sorts. One called the Training Center of German Industry resembles the RKW in organizational form. It operates nationally through regional administrative bodies in each of the federal states. The second type of private provider with strong links to employer's organizations is professional associates. These are organized on an industry basis and include: the Association for Professional Education in Banking, the Institute for Professional Education in Retail Trade, and the Training Guild for Metalworkers.

There are other private training providers in Germany, but those with close ties to employer's associations are certainly the most important. Coordination of management development efforts through these providers is of the greatest benefit to the small- and medium-sized firms which in Germany do 50% or more of their ongoing training externally. In contrast, large firms typically do 90% of ongoing training internally, using external providers for specialty classes particularly in the area of information technology.[14]

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[14]Source on statistics: Reinhold Weiss "Die 26-Mrd.-Investition--Kosten und Strukturen betrieblicher Weiterbildung" (A Book) Koeln: Deutscher Institu Verlag.)

External Support for Firm Training - U.S.

In the U.S., by contrast, there are relatively weak intermediate institutions, such as employer organizations, and the government has not historically supported professional development within firms, other than allowing companies to deduct training costs from operating expenses before taxes. Recently, however, the Clinton Administration has launched a network of Manufacturing Technology and Extension Centers, similar to the RKW , which help small firms improve their product and process technology (Finegold et. al., 1994).[15] Much of the service these Centers provide is essentially management development for SMEs, enabling small firms to redesign their organizations and upskill their workforce.

State governments have played a more direct role in management development and worker training. The level and type of government support varies widely across the fifty states (McDonnell and Zellman, 1993). The growth in state-subsidized customized training is part of a general tend toward integration of education and training and economic development at the state level. North and South Carolina, for example, have been leaders in attracting new businesses (Batt and Osterman, 1993). Iowa and Oklahoma have programs allow eligible firms to fund their training expenses through the issuance of bonds that are underwritten by the state. The funds can be used to train new workers or retrain existing workers, with community colleges and private consultants usually providing the training. If, after the training, the firm shows an increase in profits, some or all of the interest and principal payments are forgiven by the state. The reasoning is that effective training should have a positive effect on the bottom-line financial results of the company, and if this happens, the firm is contributing more in state taxes, which thus allows the training to effectively pay for itself.

Likewise, Arizona recently enacted state support for professional development as an incentive for companies to create new jobs. A $3 million fund is set aside each year which corporations can apply for if they are expanding their Arizona operation or relocating to the state. In either case, they must be adding new jobs. Twenty percent of the pool has been set aside each year to assist small companies (< 100 total employees). A common aspect to all the programs described is that although the government provides funding and clear guidelines for eligibility and repayment, they do not directly provide the retraining. Firms are free to contract with education providers, both public and private, to design and build the courses they deem the most worthwhile.

These state and federal initiatives, however, are relatively minor in the context of overall U.S. management development. For example, although the AMA fulfills a role similar to that of the Irish Management Institute (IMI) and the and Rationalization Committee of German Industry (RKW), it receives no public funding, unlike its foreign counterparts. The AMA is a non-profit educational institution that funds itself strictly through course fees and sales of journals and books it publishes. David Fagiano, President of the AMA, states the reasons for this, "We not only don't seek government assistance, we don't accept it when offered. If we can't run our own business, successfully, how can we expect to help our members and clients run theirs?"

Customized Training

A major trend for the AMA and other U.S. providers of management development to firms is the growth in customized training. This firm-specific training uses the specific business problems faced by the company as course material and incorporates the firm's business requirements and strategy, rather than focusing on the general development of the individual. Customized training is particularly popular among small and medium-size enterprises (SMEs) which want to link professional development requirements with their corporate strategies,

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[15]These centers, like virtually all of the Department of Commerce's new cooperative programs with industry, have been targetted for elimination in the Republican's budget proposals.

This trend toward customization has been demand-driven. Corporate directors are questioning the economic returns to the company from costly executive education or other general-audience short courses. While it "may pay off for the individual participant, there is little evidence of how such education has increased the value of the business corporations." According to Margerison (1992), "companies are using executive education to meet specific strategic goals or transform corporate culture; organizational transformation is replacing a focus on personal development."

In custom courses, the education provider--usually business school executive education departments, community college professional development centers, or private providers--tailors coursework to the business needs of individual companies, and teaches only selected managers and professionals from that company, often on-site. The courses may be only a few days or part of an ongoing partnership between the provider and the firm. The educator may access proprietary information that requires confidentiality agreements or similar guarantees.

In the past business schools had resisted customizing courses, but they can no longer afford not to. At UCLA, customized courses have increased from 10 to 40 percent of the executive education department's revenues over the past three years and demand is still growing. This trend is also apparent in other leading business schools. (See Table 7).

Smaller companies and companies seeking to retrain large segments of their workforce are more likely to seek their customized training from community colleges. Community colleges provide the most affordable and accessible training for SMEs. The two community colleges included in our sample, California's Glendale Community College and Arizona's Mesa Community College are at the forefront of on-site, customized training.

Glendale College, through its Professional Development Center, has trained individuals in hundreds of SMEs. Most of the training is customized total quality management (TQM) and statistical process control (SPC) training, which Glendale provides on the firm's premises after performing a consultant-style analysis of the company's specific business needs.

The company often uses Glendale's training to initiate an effort to transform the business processes and culture of the organization. Participants in the initial training cohort are purposely selected to represent a cross-section of all the major business functions and levels within the organization. For example, trainees may include the head of accounting, a mid-level operations professional and someone from marketing. When the class is over, the skills acquired can be utilized on the job and shared with other co-workers, who may be part of a later training cohort themselves.

This has proven to be very cost effective and remarkably successful as exemplified by the case of Allfast Corporation. Allfast, a major supplier to Boeing Corporation, manufactures airline fasteners. Two years ago, an initial group of about 25 Allfast managers and employees underwent Boeing-specific TQM training through Glendale Community College. Allfast's president, Jim Randall, credits the Glendale training with turning his company around, both

Table 7

The Growing Importance of Customization

School	1990-91 (Actual)	1992-93 (Estimated)
Rutgers University		
Custom enrollment as percent of total enrollment	26.9	37.8
Custom revenue as percent of total revenue	25.4	42.4
Texas A & M		
Custom enrollment as percent of total enrollment	69.2	87.7
Custom revenue as percent of total revenue	51.4	75.8
University of Houston		
Custom enrollment as percent of total enrollment	11.6	44.4
Custom revenue as percent of total revenue	41.7	50.0
University of Virginia		
Custom enrollment as percent of total enrollment	21.5	26.8
Custom revenue as percent of total revenue	15.4	20.7

SOURCE: The Wall Street Journal/Bricker's Survey of Business Schools

financially and regarding worker morale. Two additional groups of Allfast workers have since undergone the twenty-week TQM program. The results: $1.5 million savings in scrap metal costs, increased profits, raises and bonuses for all the workers (the first raise in three years), a lucrative "preferred provider" contract with Boeing, and enthusiastic support from employees who now look forward to weekly team trouble-shooting meetings.

Private providers, such as the AMA and Globecon, previously discussed in the Short Courses model, have also added or increased the customized component of their training. At the AMA, the newest division, AMA On-Site, is the fastest growing. AMA On-Site provides week-long courses, at the customer's own facility, that are tailored versions of AMA's general seminars. Globecon has carved a successful niche by combining consulting and education services to "solve a bank's overall business problems, rather than just their training needs", according to its president.

DRIVERS OF CHANGE IN MANAGEMENT DEVELOPMENT

Through the 1980s, the established models of management development appeared to serve both countries well. The Germans' insistence on rigorous and systematic initial preparation produced managers with a high level of technical skill that helped them becoming the world's leading producer of capital goods, while Americans willingness to invest in their own management development in institutions ranging from community colleges to top business schools, combined with the major training efforts of large firms, produced an amples supply of well-trained managers.

There are major changes taking place in the international economy , however, that are creating new demands on managers and posing significant challenges for providers of education and training. As noted earlier, we asked respondents to rate ten factors -- on a scale from 1 (not very

important) to 5 (very important) -- were likely to have the strongest impact on management development now and in the future (see Figure 3).[16] Most of the trends were rated at least somewhat important in the two countries, and two -- technological change and customization -- averaged >4 on the five point scale from all respondents. These trends are often closely inter-related. For example, many interviewees cited the communications revolution as making both globalization and customization more feasible and manageable. Americans tended to give somewhat higher ratings than their German counterparts and there were some significant differences in the weight they attached to different factors.[17] Below we discuss some of the major trends along with rigidities built into the existing models of management development that need to be overcome to meet emerging skill needs.[18]

Globalization

Globalization was rated as significantly more important on average by American respondents (4.6) than Germans (3.9). An expert on international business noted that a culture change can take place when companies recognize that over half their revenue is coming from overseas. This change is already taking place in such leading U.S. companies as Ford, Coca Cola and the major cigarette manufacturers. Although German firms have been the world's leading exporter of manufactured goods for decades, they appear to have been slower than top American firms in making the transition from exporters to transnational enterprises that seek to locate operations wherever they can find the best match of skills and requirements. With the appreciation of the Mark, on top of high labor costs and short working hours, German manufacturers are finding it increasingly necessary to outsource production to lower-wage countries in Eastern Europe, Asia, and Latin America, as well as the U.S.

The developing nations are also providing markets for products like consumer goods, telecommunications equipment, and power generation equipment. The Pacific Rim was widely viewed as the most important world market for the future by both countries. Pepsi Cola, for instance, has just committed $300 million to developing and upgrading bottling plants in China, while Motorola recently opened a branch of its "University" in Beijing. German firms are also moving aggressively into Asian markets from their traditional strong position throughout Europe.

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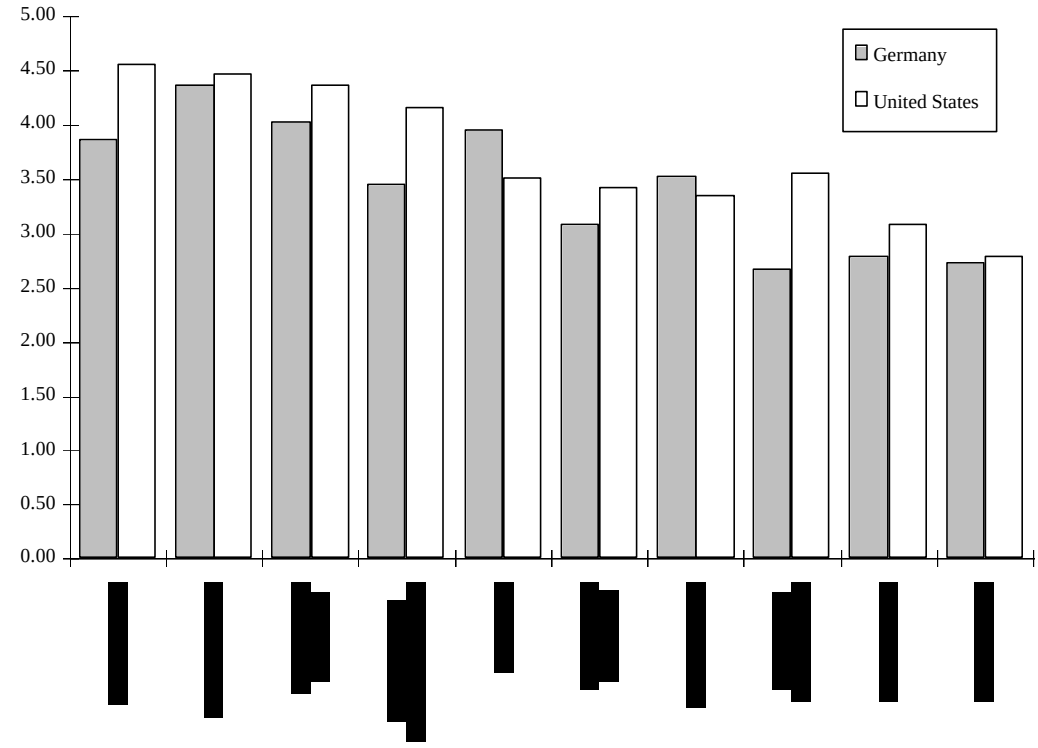
[16]Added confirmation of the importance of trends came during the course of our research as we collected lists that others had assembled that closely resembled our ten trends.

[17]It is important not to read too much into small differences between trends (since our sample size was small), - rather the ratings are one indicator of which forces are likely to have the greatest impact on managers, now and in the future.

[18]Survey participants were given an opportunity to introduce and discuss trends not included in our ratings sheet that they, nevertheless, regarded as important. The trends cited most frequently were: shorter cycle-time, standardization, and quality.

Figure 3 - Drivers of Change in Management Development



The continued globalization of the world economy will demand high levels of intercultural skills. Firms need managers who can operate production facilities in non-native countries as well as establish new markets in other nations. While these capabilities are useful for exporters or multinational corporations, they become even more critical as companies seek to make the transition to truly global operations, requiring ongoing complex decisions over the best place to locate each process.[19]

Despite a strong consensus on the need to raise the international consciousness, the education systems of both countries appear to be weak in the area of generating international skills. In the U.S. a very small percentage of students learn a foreign language in either school or college, and the average citizen's knowledge of even basic world geography is very poor. In Germany, a second language is a basic requirement of the school curriculum, but only a few universities have faculties devoted to international studies, with most courses concentrated in elite, private universities and M.B.A. programs. Periods spent abroad by German youths while in higher education are similarly the exception. Management educators voiced particular concern about the lack of exposure to the Pacific Rim in courses of relevance to management studies. In U.S. MBA programs, as noted earlier, the internationalization of the curriculum is a major trend, but very few institutions have taken advantage of the high percentage of foreign students in their courses to broaden the learning experience.

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[19]German and Japanese firms are now trying to change from leading exporters to transnational companies, but are only just beginning to cope with the implications of this change for their management development systems.

Firm-based management development efforts do not, moreover, cover the gap left by the higher education system in the area of international skills development. In the hotel industry, for example, time spent abroad is normally considered a prerequisite for movement into management, but the burden is usually on the individual to generate his or her own international skill set through work or study abroad. In other industries, developing the language and cultural skills necessary for business in a global economy becomes a prerequisite only for those wishing to move into top management.

Customization

Customizing products and services to ever more segmented markets was the top-rated trend, although some gave it a lower ranking because, as one noted, "the increased focus on the needs of customers... isn't a new trend; it has always been important." There was general agreement that customers are becoming more sophisticated and competitors are moving faster to meet their evolving needs. For example, food items are tailored to national (even regional) tastes of consumers in developing country markets, while electronics manufacturers must incorporate technological advances quickly, tailoring products for specific customers. The need to specialize in increasingly narrow product niches must be reconciled with pressures to sell globally, not just nationally or locally. Firms in general viewed customization as the most important business trend, rating it relatively higher than educators did As noted above, U.S. providers of management development have been far

Technological Change

Technological change was an important trend for both countries and all types of institutions as they struggle to deal with ever larger and more complex data sources[20] . Banks use information technology to increase the efficiency of transaction processing, offer customers faster access to services, and support complex derivative products. Production management and control of global marketing and distribution operations are some of the ways in which manufacturers take advantage of information technology. Hotel chains are increasingly dependent on global reservation networks that link them with other parts (airlines, auto rental agencies) of the travel industry. Respondents noted the close relationship between technological advances and increased information and communication. Managers also expressed a g

In training for information technology, the German model of management development, with its strong technical emphasis in management education, appears to have advantage over the more financial orientation of many U.S. management programs. A large percentage of *Fachhochschulen* graduates have earned their degrees specifically in areas related to the strategic use of information in business (*Wirtschafsinformatik*). Moreover, the system of having a second level of vocational qualification allows non-graduates to upgrade their knowledge in sector-specific applications of economics, business administration, and information technology. The more modular, flexible system of management development in the U.S., however, appears better placed to cope with the rapid pace of technological change. As one German technology consultant commented, "a given generation of information technology products is replaced every two to three years, creating a commensurate need for a constant upgrading of technological skills." Yet, in the way the German model of management development is constructed, it is only the small set of top managers who are continually trained to keep their skill set abreast of market developments, while more U.S. managers are able to update their skills through short courses from public and private providers.

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[20]Some interviewees cited advances in information technology as a force which they could not control, but had to learn to profit from.

Recession

The global recession of the early 1990s created severe pressures on firms to restructure. Regardless of whether their business was growing or declining, most respondents reported substantial increases in the amount of work expected of each employee and manager, generating a general sense of increasing "pressure" to perform on the job--pressures that do not seem to disappear even once a firm is back on strong economic footing. Further, these cuts hit white-collar and managerial positions, not just the line or blue-collar workers laid off in previous economic downturns.[21] German respondents weighted the recession as more important than their U.S. counterparts, no doubt reflecting the later economic recovery which was just beginning in Germany when the fieldwork was conducted in the first four months of 1994.

Workforce Composition

The U.S. respondents also saw ethnic and racial diversity in the workplace as a far more important challenges now and for the future than the Germans (3.6 vs. 2.7 mean rating), not surprising given the much higher percentage of women and minorities in the U.S. workforce .[22] American educators, in particular, commented on the importance of preparing for a more diverse workforce. The need to accommodate workers' families as women assume careers is a variant of this theme that emerged during the interviews. Respondents, particularly women, expressed concern over the responsiveness of business to increased work/family conflict, two-career families, the demand for family benefits as part of a compensation package, and a desire to maintain a higher quality of life.[23]

Business Responses to External Change

Companies are responding to changes in the external environment by adopting significant changes in their organizational structures and management practices referred to in business literature as "lean management," "reengineering," or "corporate streamlining". These actions are having dramatic effects on the skill demands placed on managers and workers. While there are many interconnected facets to organizational restructuring (summarized below), they all appear to be part of corporate efforts to become more *flexible*, to improve the capacity of the firm and its managers to cope with some of the changes -- increased global competition, rapid introduction of new technologies and customization -- identified in the previous section.

Cross functional teams. Design project managers must forge experts from a large number of different fields into a time-limited team that can produce a new product for a well-defined price and market, shaving years off old development times. One U.S. manufacturer that we visited used a design team which combined production, marketing and research personnel to cut the time required to develop a new product from three years to nine months. The team also achieved its

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[21]This trend plays out differently among large Japanese firms who report that they plan to maintain their commitments to lifetime employment for the foreseeable future. These firms have frequently addressed overstaffing at management levels by transferring unneeded managers to supplier firms .

[22]This reflects the general composition of management in these countries and consequently our sample, with few minorities or female middle and upper managers. Just under one-third of our U.S. sample was female.

[23]One American banker, newly returned from maternity leave, listed this as her personal premier issue, and one that was of major concern to everyone (but especially women) in her age bracket at her bank.

targets of reducing the number of parts and costs by more than 50 percent from the previous model of the machine.

Integrating processes across department boundaries. Firms are integrating processes formerly fragmented across several functional departments, often in conjunction with quality improvement, productivity enhancement, or cycle time reduction initiatives. In manufacturing and consumer products industries, the goal is to reduce production and inventory costs while maintaining or improving quality. Hotels and banks aim to reduce administrative costs while maintaining or improving customer service.[24]

Organizing around products and local/national markets. Reorganizing around products and markets is seen as central to better meeting customer needs. For example, regional or global headquarters empower country management, while manufacturing business units are granted more independence from division headquarters. Interestingly, in our sample, manufacturers seemed to organize teams around specific products, while service firms (such as banks or hotels) created teams that seek to meet customer needs in particular geographic markets *across* a wide range of services. A matrix structure may be employed, where the customer deals with a single individual who then deals internally with functional departments or multifunction product-focused business units.[25]

Worker empowerment-Delegating authority to lower levels of the organization. Pressures to cut costs and customize products and services have combined with newly available enhancements in information technology to lead many firms interviewed to delegate authority to lower levels in the organization. For large hotel chains and for business consulting firms, the process of decentralization started several years ago, with cuts at central offices and a shift of responsibilities for developing product strategy, as well as for marketing, finance, and personnel decisions to the single hotel or consultant group. Large banks presently find themselves moving in a similar direction, decentralizing more decision-making power to their branches to allow for greater responsiveness to local market conditions. In the manufacturing sector, the imperative towards decentralization has been felt especially strongly in sectors where product life-cycles are the shortest, e.g., electronics. As an executive of a firm which had recently undergone major organizational restructuring stated, "rather than having products developed centrally, produced at the operating sites, and then returned to the central office to be marketed, we can get to the market much quicker if the three steps occur in one physical location with different functional groups working closely together at each stage." While some respondents did note that these changes can "empower" line workers and technical staff, they are also a source of new pressures on managers who must learn a new set of skills, such as coaching and facilitating.

Reducing the number of management layers. Delegation means that activities can be coordinated by fewer layers of management, lowering costs and speeding decisions. Firms mentioned reductions in management layers in hotels and manufacturing facilities and at divisional, country, and headquarters levels, changes that are especially focused on eliminating what one respondent labeled "1960s jobs." These layers are often replaced by information technology and informal horizontal communication among teams, work sites, and business units.

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[24]Japanese firms tended to mention process redesign less often than U.S. or European firms, perhaps because they have been leaders in integrating production and design processes, but are only now addressing their inefficient administrative systems (RAND interviews; Schlender, 1994).

[25]In parallel, however, information technology may be used to exploit economies of scale by centralizing processes like transaction processing.

Implications for Managerial Skills

The net effect of the above organizational changes is to create several new skill requirements for managers:

Combining analytic and interpersonal skills. In traditional, hierarchical U.S. and German firms, managers experienced a gradual evolution in the demands they faced, moving from a need for "hard" technical knowledge of particular functions or products at lower levels, to an emphasis on "softer" communication and negotiation skills at higher management levels. With firms reducing management layers and relying more on teams to customize output, a growing number of managers need both "hard" and "soft" skill earlier in their careers.[26] Both countries are placing a growing emphasis on interpersonal and "facilitative management" skills. American business schools are strengthening this area of the curriculum, while firms are stressing these qualities both in screening of job applicants and initial training programs (EQW, 1995). Among European businesses, German firms rank near the top in the amount of resources devoted to management further training for motivation and communication skills (Guagler and Witz, 1993). Another staple of personnel development in German industry is yearly meetings between managers and their direct subordinates to make evaluations, improve communication, and set out goals for the coming year. Finally, unlike other areas of management development, training in interpersonal skills is an area in which lower- and mid-level German managers are included.

Despite the attention to building interpersonal skills, German firms may nevertheless face greater problems than the U.S. in making the transition from hierarchical to team-oriented forms of work. There are two reasons for expecting difficulties. The first is the residual hierarchy of German industry. This manifests itself in a preoccupation with certifying and ranking skill levels, e.g., the university over the *Fachhochschulen*, the *Meister* certificate over that of the skilled worker. It also appears in the emphasis German managers at all levels place on technical expertise as the basis for their authority. These ways of ranking skill levels make the transition to fluid organizational structures with less clear structure of expertise difficult to implement. A second barrier to creating teams is the minimal use of job rotation by German firms for the purposes of personnel development. Since most managers do not have opportunities to cultivate their skills in different functional areas, they may be less adequately prepared to organize and lead teams of functional experts.

Lifelong learning. As companies become flatter and more flexible, outsourcing many activities, more managers face career paths that are horizontal across a number of different functions in the organization or several companies rather than vertical ("stovepiped") within a single field of expertise (Kiechel, 1994). Indeed, several firms mentioned that they no longer have career ladders, since it is not possible to predict what route a manager will follow. To cope with this uncertain environment, managers need both a broad initial education and continuing opportunities to update or alter their skills.

Blurring of manager's and worker's skill needs. These changes do not affect managers alone; respondents across all industries and countries noted the need for broader skills, flexibility, and versatility among all workers. Workers too must increasingly have language skills, math and computer skills, and an orientation towards total support of customer needs.[27] Some firms have adapted by combining managers and workers in their skill development programs.

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[26]There remain, of course, significant differences in skill requirements for different levels of managers; senior executives, for example, require a much greater knowledge of corporate strategy.

[27]Particularly among small firms, which generally noted having fewer available specialists to address particular customer or market demands.

Not all the skill needs are common, however. Managers face additional pressures to make the transition from giving orders to workers to acting as trainers and facilitators for more autonomous work groups (Dumaine, 1993). This requires highly-developed abilities to motivate, mentor, and counsel employees, be entrepreneurs, prioritize schedules, manage time, and coordinate work--a set of skills one respondent colorfully described as "headshaping."[28]

In addition to new skill demands, our interviews revealed a couple of major unresolved questions regarding how management development should respond to changes in business practices.

Should managers be generalists or specialists? Within the widespread agreement on the need for managers to have both analytic and interpersonal skills, there were conflicting views from respondents on whether they should strive to be generalists or specialists. The shift toward team-working calls for individuals to have a unique set of competencies to contribute to group efforts, while an environment of rapid change increases the likelihood that any specialty may become obsolete. Indiana University's John Rau encourages all his MBA students to do both--acquire a general skill set and then layer on top a special area of expertise (Kiechel, 1994).

Is management development the responsibility of the firm or of the individual? A growing number of firms are seeking to increase the return on their human resource investments by switching to training programs that are targeted to the specific needs of their operations and their individual managers (see Customized Training Model, next section). Other forces, however, are leading firms to reduce their focus on formal management development programs, essentially devolving responsibility for skill development to individual managers (Sherman, 1993). This latter strategy is, in part, a reaction to economic stresses and the large cost of operating such programs, but also reflects longer-term trends, as individual career paths become less certain.

Does management development meet changing organizational needs? In most firms, there was a major gap between the perceived current and future needs of managers and the organizational response. For example, while most respondents cited the ability to develop the skills of subordinates as essential for effective managers, few were able to cite concrete examples of ways in which organizations rewarded or even systematically encouraged such behavior.[29] Likewise, even firms making major investments in new computer information systems have so far provided little systematic training to enhance the effectiveness with which managers use this information.

A striking finding was that very few firms explicitly link training or management development programs to systematic change initiatives going on in the firm. Almost all respondents noted increasing need for customized products or services, pressures to do "more with less," demands for ever higher quality and faster delivery of products, more team-based work, and increasing floods of information as inter-related trends that rendered the workplace today different in significant ways from that of the past. But there are, so far, few explicit attempts by firms to redesign management development and human resource programs to meet these needs.

CONCLUSION

The comparison of the U.S. and German systems of management development reveals several broad conclusions. First, it shows the problem of overemphasizing initial management qualification at the expense of ongoing training in a rapidly evolving world economy. Second, it suggests the advantages of stimulating competition and a well-functioning market in the provision of

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[28]Some European respondents noted that workers today have higher levels of education, and can be quite resistant to manipulative managerial strategies.

[29]The notable exceptions here were most large Japanese firms, and other firms that used "360 degree" or "four-way" evaluations in which employees provide evaluations of supervisor performance.

management development, rather than direct public provision or regulation of management development. And third it suggests that in those areas where the market does not operate effectively, there are benefits from public–private coordination and/or state programs that create incentives for firms and individuals to invest in training.

Germany

The hallmark of the German management model is a commitment to professional preparation. Through a combination of theoretical and practical training, managers are expected to develop a very deep and rich understanding of their intended area of professional expertise. For students at the *Fachhochschulen* as well as those at private universities, the combination of theory and practice is a standard part of these institutions' curriculum. For university students, completion of an apprenticeship is often used to complement their stricter theoretical training with hands-on experience. The *Meister*, *Fachwirt*, and *Fachaufleute* courses mean, moreover, that in the German case it is not just top managers, but also those at lower and middle levels of corporations who are comprehensively prepared for their jobs. The courses round out practical work experience with a more theoretical treatment of subjects related to supervision and management.

The emphasis on thorough initial training, a historical strength of the German system, may now be becoming a weakness. It has encouraged German firms to rely heavily on external mechanisms of management skill development and to concentrate their own development efforts on a small and select group. In the process, the functional or "single-career" management model has become the accepted paradigm. Rapid economic and technological change mean, however, that the single-career model has become outdated as firms place greater emphasis on the need for functional breadth and continuous learning. In the emerging world economy, therefore, the high-quality initial management training received by most German managers will be a strength only if this acquired skill set can be continually expanded and upgraded.

The German case suggests are the advantages of public support for private initiative and the dangers of public regulation in the area of management development. For both the work of the Chambers of Commerce in further training and the RKW in management development more generally, firms act as the basic driver of change with public policy playing a supporting role. Further training courses and seminars are developed informally in conjunction with private industry. Consulting and other advising activities are likewise oriented toward meeting market demand. Public policy builds on private initiative to encourage and hasten the diffusion of innovation. Government support gives both organizations a degree of independence from the vagaries of the market, allowing them to continue their activities through recessions. By lowering the costs of training and consulting activities, government subsidies also allow these non-profit organizations to reach a larger number of firms.

In contrast to its supporting role in the areas of further training and development, the German government has taken an active role in regulating higher education. The effect has been to bureaucratize the educational system and make it less responsive to the skill needs of industry. Said one interviewee, "the system [of higher education] puts professors first, students a distant second, and ignores the needs of industry altogether. It needs to be changed to put students in the role of consumers of professional skills and professors in the position of providing a service." While perhaps overstated, this opinion reflects a widely-held belief among those interviewed that overregulation of higher regulation is a major weakness in the existing model of management development.

Three factors were cited as helping to create a "bureaucratic mentality" and to inhibit innovation among providers of higher education. The first is the way in which curricula are determined. Reorganizing an existing course or introducing a new course at either type of public institution requires several levels of deliberation and consultation, both inside the institution itself and with local educational authorities. The effect is to discourage new ideas. The second factor cited as inhibiting innovation is the professors' status as civil servants with lifetime appointments,

which effectively insulates them from having to respond to the demanders of marketable skills, e.g., students and firms. A final factor cited as discouraging innovation is disincentives to be active in the area of management further training and customized courses. Money earned from offering further training courses goes neither to the professor, the professor's faculty, nor to the university or *Fachhochschule* itself, but straight to the state. By removing the financial incentives for involvement in management further training, the state has stemmed the flow of ideas between industry and higher education which normally arise from this activity.

The result has been to discourage the public institutions of higher education from keeping pace with market developments. Not surprisingly, most innovations have come from outside the public educational system in the form of private university education and M.B.A. programs. Management developers and university professors alike agreed that the present system of management education could be improved by higher levels of competition between providers.

The U.S.

The U.S. case illustrates both the strengths and weaknesses of a market-based approach to management development. Individuals, firms, and educators are the primary actors in this system; the government does not play a significant role. Individuals and firms are the initiators of, payers for, and beneficiaries of management education; they are the source of demand in the system. Colleges and private training institutions supply management education in response to the changing business environment. Firms are becoming increasingly dominant players in the professional development marketplace. Since they are the largest source of funding for post-employment training, firms exercise great power in determining course offerings. In recent years, businesses have been demanding more customized training, or otherwise requiring that training be more firm-specific, in order to receive a greater return on their professional development investment.

The government does play a minor role in the management education marketplace, especially where public investment in training is viewed as a means of retaining or attracting business. The federal role is largely confined to student loans for low-income groups. States subsidize education and training, while allowing firms and individuals to make the actual decisions about which schools to choose, how courses should be offered, and who should receive training. Where states have launched training programs they have attempted to increase the return on this investment by tying the funding to demonstrated results. This approach fosters competition among trainers, flexibility of provision, and less bureaucracy while avoiding problems such as crowding out of private trainers and slow rates of response to changing demands. But in the absence of regulation and national standards, it is often difficult for individuals or firms to ascertain the quality of the many courses on offer. Likewise, reliance on the market can exclude those actors -- whether economically disadvantaged students or some mall firms -- that do not have the resources to invest in management development.

BIBLIOGRAPHY

American Assembly of Collegiate Schools of Business, *Final Report: the AACSB Accreditation Project*, 1990.

Applied Management and Planning Group. An Evaluation of the California Employment Training Panel. Report submitted to the California Legislature, July, 1992.

Baker, S., "Now Comes the Corporate Triathlete." *Business Week*, January 31, 1994, pp. 71-72.

Batt, Rosemary, and Paul Ostermman, *A National Policy for Workplace Training*, Washington, D.C., Economic Policy Institute, 1993.

Bigelow, John (ed.), *Managerial Skills: Explorations in Practical Knowledge*, Sage Publications, Newbury Park, CA, 1991.

Bikson, Tora K. and Sally Ann Law, *Global Preparedness and Human Resources: College and Corporate Perspectives*, RAND DRU-139-1-CPC/IET, August, 1993.

Blyton, Paul, and Peter Turnbull (eds.), *Reassessing Human Resource Management*, Sage Publications, London, England, 1992.

Bongiorno, Lori, "Corporate America's New Lesson Plan", *Business Week*, October 25, 1993, pp. 102-106.

Bundesministerium fur Bildung und Wissenschaft. *Grund- und Strukturdaten, 1993–94*, Bonn.

"Business Education in France," supplement to the *International Herald Tribune*, March 15, 1994.

Clark, Jon (ed.), *Human Resource Management and Technical Change*, Sage Publications, London, England, 1993.

de Lisser, Eleena, "Just for You," *Wall Street Journal*, September 10, 1993, p. R3.

Deutscher Industrie– und Handelstag, *Berufsbildung, Weiterbildung, und Bildungspolitik, 1991–92*, Bonn.

Dumaine, B., "The New Non-Manager Managers," *Fortune*, February 22, 1993, pp. 80-84.

"Educating the Workforce of the Future", *Harvard Business Review*, March-April, 1994, pp. 39-51.

Emerging Exporters: Australia's High Value-Added Manufacturing Exporters, final report by McKinsey & Co. to the Australian Manufacturing Council, June, 1993.

"Executive Education", *Wall Street Journal* (special section), Sept. 10, 1993, pp. R1-R12.

"Farming Out the Farm", *The Economist*, Mar. 5, 1994, p. 79.

Fazey, Ian Hamilton, "Business School Blueprint", *Financial Times*, Jan. 21, 1994.

Finegold, David and Geoff Mason, "International study links training and education to increased productivity in spring industry," *Springs Magazine*, Spring 1994.

Finegold, David, Laurel McFarland and William Richardson (eds.) *Something Borrowed, Something Learned?* Washington, DC, The Brookings Institution, 1993.

Finegold, David, Susan Schechter, Jeff Luck, Elan Melamid, Heide Phillips-Shockley, Brent Keltner, Brent Boultinghouse, Frank O'Carroll, Steen Scheuer, and Anne Kathrine Mandrup, *International Models of Management Development: Lessons for Australia*, Santa Monica, Calif.: RAND, MR-481-IET, June 1994.

Fitzgerald, Garret, "Positive Aspects of Ireland's Economy", *Financial Times*, Feb. 15, 1994.

Fuchsberg, G., "Executive Education: Taking Control," *Wall Street Journal*, September 10, 1993, pp. R1-R4.

Fuchsberg, Gilbert, "Harvard Weighs One-Year Version of M.B.A. Program", *Wall Street Journal*, October 29,1993, pp. B1, B6.

The Galvin Report-Managers for Ireland, The Advisory Committee on Management Training Report, November 1988.

The Global Challenge: Australian Manufacturing in the 1990's; Final Report of the Study by Pappas Carter Evans and Koop/Telesis; Australian Manufacturing Council, July, 1990.

GMAT - Admissions Office Profile of Candidates Five Year Summary (1987/88 - 1991/92), Graduate Management Admission Council, Santa Monica, CA, March, 1993.

Grant, Robert M., and Rami Shani and R. Krishnan, "TQM's Challenge to Management Theory and Practice", *Sloan Management Review*, Winter, 1994, pp. 25-45.

Griffiths, John, "Japanese Carmakers Back 'Learning' Project", *New York Times*, Feb. 16, 1994.

Guagler, Eduard and Stefan Witz, 1993, *Personalwesen im Europaischen Vergleich: the Price Waterhouse Cranfield Project on International Strategic Human Resource Management*, Mannheim: Universitat Mannheim-Lehrstuhl fur ABWL, Personalwesen und Arbeitswissenschaft.

Haller, Sabine, 1993, *Marktanalyse: MBA-Programme in der Bundersrepublik*, Working Paper, Fachhochschule fur Wirtschaft, Berlin, December.

Handy, Charles, *The Making of Managers: A report on management education, training and development in the USA, West Germany, France, Japan, and the UK*, National Economic Development Office, London, England, 1987.

Handy, Charles, "The Intellectual Organization", *Financial Times*, Dec. 29, 1993.

Handy, Charles, *The Age of Paradox*, Harvard Business School Press, Cambridge, MA, 1994.

Handy, Charles, "Tender Loving Care for Better Workers", *Financial Times*, Feb. 21, 1994.

Harrison, Mark, "Management Training and Higher Education", (unpublished paper), March, 1993.

Henry, Donald Putnam, and Claire E. Mitchell, *The Contribution of Science and Technology to Economic Performance*, March, 1992. RAND Corporation, WD-5475-2-DOS, March, 1992.

Huey, J., "Managing in the Midst of Chaos," *Fortune*, April 5, 1993.

Huey, J., "Where Managers Will Go," *Fortune*, January 27, 1992, pp. 50-60.

Industry Training in Australia: The Need for Change, the Department of Employment, Education and Training, Australian Government Publishing Service, Canberra, Australia, 1988.

Interim Report on the Benchmark Study of the Management Development in Australian Private Enterprises, National Board of Employment, Education, and Training, Commissioned Report No. 5, September, 1990.

Inquiry Into Management Education: Report, Commonwealth of Australia, Canberra, Australia, April, 1982. (alias: "The Ralph Report")

Johnson, Terry R., Steven D. McLaughlin, Lise M. Saari, and Denise M. Zimmerle, *The Demand and Supply of University-Based Executive Education*, Graduate Management Admission Council Occasional Papers, Santa Monica, California, August, 1988.

Kanter, R. M., "The New Managerial Work." *Harvard Business Review*, November-December, 1989, pp. 85-92.

Kelly, Kevin, and Peter Burrows, "Motorola: Training for the Millenium", *Business Week*, March 28, 1994, pp. 158-162.

Kiechel, Walter III, "A Manager's Career in the New Economy", *Fortune*, April 4, 1994, pp. 68-71.

Kienbaum und Partner Internationale Personal- und Unternehmensberatung, GmbH. *Vergutungsstudie, 1990 & 1993*, Gummersbach.

Krugman, Paul, *Peddling Prosperity*, W.W. Norton & Company, New York, 1994.

Kunreuther, R., "Performance Appraisal, the TQM Way." *Government Executive*, July, 1993, pp. 43-44.

Labour/Management Programme: Human Resources Development in a Changing Business Environment, Organization for Economic Co-Operation and Development, External Relations Division, Report on a meeting of Management Experts held under the OECD Labour/Management Programme, Paris, 1993.

Leadership for a Changing World: the Future Role of Graduate Management Education, the Commission on Admission to Graduate Management Education for the Graduate Management Admission Council, Santa Monica, CA, 1990.

Lillard, Lee A., and Hong W. Tan, *Private Sector Training: Who Gets It and What Are Its Effects?*, RAND Corporation, R-3331-DOL/RC, Santa Monica, California, March, 1986.

Luck, Jeff and Elan Melamid, "A New Paradigm for Organization in Public Sector Institutions", RAND (class paper), June 29, 1993.

Lorenz, Christopher, "A New Mind-set for the Manager", *Financial Times*, Feb. 16, 1994.

Lorenz, Christopher, "Styles of Execution", *Financial Times*, Feb. 23, 1994.

McLaughlin, Steven D., and Terry R. Johnson, *Characteristics of GMAT Registrants and their Likelihood of Taking the Test*, Graduate Management Admission Council Occasional Papers, Santa Monica, California, 1994.

Marchington, Mick, and Adrian Wilkinson, Peter Ackers and John Goodman, "The Influence of Managerial Relations on Waves of Employee Involvement", *British Journal of Industrial Relations*, 31:4, December, 1993, pp. 553-576.

Morgenson, Charles, "The Rise of The Corporate Business School," *Target Management Development Review*, Vol. 5, No. 6, 1992, pp. 13-17.

Mintzberg, Henry, "The Fall and Rise of Strategic Planning", *Harvard Business Review*, January-February, 1994, pp. 107-114.

National Competition Policy, Report by the Independent Committee on Inquiry, Australian Government Publishing Service, Canberra, Australia, 1993.

Noble, Barbara Presley, "Coming Soon: Get a Life 101?", *New York Times*, Feb. 27,1994, p. F41.

O'Reilley, Brian, "Reengineering the MBA", *Fortune*, January 24, 1994, pp. 38-43.

O'Reilly, B., "How Execs Learn Now," *Fortune*, April 5, 1993.

Osterman, Paul, "How Common is Workplace Transformation and Who Adopts It?," *Industrial and Labor Relations Review*, 47:2, Jan. 1994, pp. 173-88.

"Outsource Boom for In-house Services", *Financial Times*, Jan. 11, 1994.

Porter, Lyman W. and Lawrence E. McKibbin, *Management Education and Development; Drift or Thrust into the 21st Century?*, McGraw Hill, New York, 1988.

Porter, Michael E., *The Competitive Advantage of Nations*, The Free Press, New York, 1990.

Rationalisierungs-Kuratorium der Deutschen Wirtschaft, *Jahresberictht 1992*, Eschborn.

"Re-engineering Europe", *The Economist*, Feb. 26, 1994, pp. 63-64.

Richards, Bill, "At Nation's Mid-tier Business Schools, Toughest Course is Attracting Applicants", *The Wall Street Journal*, April 6, 1994, pp. B1-B5.

Robinson, A. G., & Schroeder, D. M., " Training, Continuous Improvement, and Human Relations: The U.S. TWI Programs and the Japanese Management Style," *California Management Review*, Winter 1993, pp. 35-57.

Scalberg, E.J., *The Executive MBA Council Survey of Executive MBA Programs*, Executive MBA Council, Los Angeles, 1988.

Scalber, E.J., "Business and Management Education at the Postsecondary Level," *Encyclopedia of Educational Research* , Vol. 1, Sixth Edition, Marvin Alkin (ed.), New York, Macmillan, 1993.

Schlender, B. R., "Japan's White Collar Blues," *Fortune*, March 21, 1994, pp. 97-104.

Schlossman, Steen, and Michael Sedlak and Harold Wechsler, *The "New Look:" the Ford Foundation and the Revolution in Business Education*, GMAC Occasional Papers, Graduate Management Admission Council, Santa Monica, CA, 1987.

Schneider, Ralf, 1993, *Umfrage zum Stand des MBA in Deutschland (Parts 1–6)*, In the *Handelsblatt* Career section, every Friday between October 22/23 and December 24/25.

Selections, (*the Magazine of the Graduate Management Admissions Council*), Autumn, 1992, (entire issue).

Selections, (*the Magazine of the Graduate Management Admissions Council*), Autumn, 1993, (entire issue).

Sherman, S., "A Brave New Darwinian Workplace," *Fortune*, January 25, 1993, pp. 50-56.

Stewart, Rosemary et al., forthcoming, "Managing in Britain and Germany." Cited in the *Financial Times* (February 23, 1994): 9.

Study on Changing Functions of Lower and Middle Management, European Foundation for the Improvement of Living and Working Conditions, European Commission, Dublin, Ireland, 1990 or 1991.

"A Survey of Management Education", *The Economist*, Mar. 2, 1991.

von Zur-Muehlen, Max, and Mankeshwar L. Kurich, *Highlights from Recent MBA Literature*, Canadian Federation of Deans of Management and Administrative Studies, University of Ottawa Faculty of Administration, May, 1987.

von Zur-Muehlen, Max (ed.), *A Review of MBA Programs in Canada with an International Perspective*, Canadian Federation of Deans of Management and Administrative Studies, University of Ottawa Faculty of Administration, April, 1990.

World Competitiveness Report 1992, International Institute for Management Development, Lausanne, Switzerland, 1992.

World Competitiveness Report 1993, International Institute for Management Development, Lausanne, Switzerland, 1993.