

**Towards the emergence of an employed entrepreneur?  
Shifting soft skill requirements in the second half of the 20th century**

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## Introduction

Almost a century ago the renowned economist, Joseph Schumpeter, stressed the importance of entrepreneurship for economic and social development. At the center of his considerations he situated the personality of the entrepreneur. For him it was obvious that individuals who succeed in fulfilling the entrepreneurial function are exceptional figures, and that only a few outstanding characters combine all the qualities necessary to realize creative responses in the face of changing conditions. Today, at the beginning of the 21st century, the conditions are changing faster than ever, and finding creative responses has become almost everyday routine: in the working sphere, as well as in private life. In any case, this view seems to be equally well established in the social sciences and in popular recommendations for the revitalization of the economy. Is therefore the “entrepreneurial society” just around the corner? A society, which is shaped by permanent change and therefore requires almost daily creative responses? With individuals, who – thanks to their personal qualities and their entrepreneurial spirit – do not consider this condition to be an unreasonable demand, but more as a challenge and a chance?

The central impetus to this development towards an entrepreneurial society is supposed to be generated by the economic system. Current descriptions of the post-Fordistic economy emphasize that the structural and organizational change in the working sphere is connected to a redefinition of the employee’s occupational role. This new role requires a new kind of employee, as the employee is now challenged by demands similar to those faced by an entrepreneur. In spite of the widely held conviction that such a shift is inevitable, there exists today little empirical knowledge about the dimension, sequence and quality of the expected change. Most of the all-embracing theories about socioeconomic change are not based on any detailed empirical data and, thus, are not able to provide more than a rough outline of the supposed development. Our research intends to partially fill this gap. Our data source – job ads – offers comprehensive, long-term information regarding some essential issues. In our present paper, we examine the shifting demand for entrepreneurial qualities on the Swiss labor market since 1950. This demand serves as an indicator for the above-mentioned development and as a measure for its quality and quantity. Therefore our central question is: to what extent and within which fields has the role of the “employed entrepreneur” actually gained in significance over the last 50 years?

Starting with Schumpeter, we shall first examine the function of the entrepreneur and the personal characteristics derived from this function. Then, the current discussion about entrepreneurship is considered in the context of long-term sociocultural change. Following this, the approaches describing the new world of work in the social sciences are summarized and the resulting changing occupational roles and shifting qualification requirements are discussed. A summary of some of the research concerned with the actual implementation of the new principles of organization will be the starting point for formulating some of our expectations regarding our own empirical data. As data source, a representative sample of job ads was prepared, published in the years 1950 to 2000 in Swiss newspapers. The skill requirements and personal characteristics mentioned in these ads are measured by means of quantitative content analysis and analyzed in their temporal development. Against this long-term background, we shall show that common conceptions about the radical changes should be qualified on several points.

## **The entrepreneurial function**

In the social sciences, agreement about the concept of entrepreneurship is lacking (Watson 2001). However, two fundamental perspectives can be differentiated: one stresses self-employment, while the other situates innovative behavior at the center of interest.

If the entrepreneur is described as a small-business owner, entrepreneurship can be equated with self-employment (Bögenhold 2000). Connected with this research perspective are models of a structural change in the economy, where small and smallest enterprises appear to be the great hope for overcoming the ossifications of Fordistic capitalism. The revival of the small businessman is believed to be crucial both for economic development and renewal, as well as for the qualitative improvement of working and living conditions (cf. Schumacher 1973; Birch 1981; Piore and Sabel 1984).

If the focus is directed toward innovative behavior, it is not the legal status of the entrepreneur that is important, but rather his or her actual function and personal characteristics. It is this version of the concept of entrepreneurship, which we are going to deal with here. In view of the numerous definitions, both old and new, we shall refer to the basic approach of Schumpeter (1912; 1947; 1949). Assuming that economic change can be understood as the result of a response to changing conditions, Schumpeter differentiates between two kinds of reaction: the “adaptive response” and the “creative response” (Schumpeter 1947:222). While the adaptive response follows the well-known paths within existing practice, the creative response opens up fundamentally new ways of economic and social development. The discovery and realization of creative responses are the characteristic functions of the entrepreneur: „the doing of new things or the doing of things already being done in a new way (innovation)“ (Schumpeter 1947:223). Thus, the entrepreneur assumes a crucial role in the process of economic development and renewal.

Schumpeter distinguishes the entrepreneur from the inventor and his reasons are twofold: On the one hand, an innovation is not always based on a new invention. Often it is not more than a creative rearrangement of well-known factors. On the other hand, Schumpeter stresses the importance of transforming ideas into action: innovation is more than invention. The distinctly entrepreneurial activities, which can be specified only with difficulty, are therefore summarized as „getting a new thing done“ (Schumpeter 1947:225). The entrepreneur does not necessarily have to be a capital-owner himself, nor does he always have to carry a large business risk (Schumpeter 1947:223; Schumpeter 1949:256). In the same way, not every business-owner can be supposed to be an entrepreneur. Only the actual fulfillment of the characteristic innovation function constitutes the entrepreneur – whether he is self-employed or an employee. However, as an innovative personality the Schumpeterian entrepreneur is always an exceptional figure.

The explicit thesis that entrepreneurship within an existing enterprise is not only possible, but may even be crucial, for the success of the organization was advanced by Pinchot (1985) with his concept of “intrapreneuring”. The “intraorganizational entrepreneurs” (short: intrapreneurs) are „the dreamers who do. Those who take hands-on responsibility for creating innovation of any kind within an organization“, while the entrepreneur is someone „who fills the role of an intrapreneur outside the organization“ (Pinchot 1985:ix).

## **The entrepreneurial personality**

Wherever the entrepreneur fulfills his innovative function, the description of his/her role is always connected with the question of the decisive personal characteristics and virtues. There

is a widespread view that the entrepreneur is a figure that is only able to accomplish the task in hand thanks to the strength of his/her personality. Correspondingly entrepreneurial gains are unlike capital returns or profits, rather they are a kind of remuneration for the personal ability to successfully realize the intended innovations (Schumpeter 1947:226ff).

What constitutes this personal ability? As already mentioned, the entrepreneurial function starts with discovering or recognizing a creative response to changing conditions. As personal traits, therefore, one can emphasize creativity, pronounced imaginative power and openness in the face of new situations, which includes the ability to deal with uncertainties. To transform an idea or invention successfully into an innovation, the entrepreneur must, however, bring along a number of further strengths. The necessary methodical abilities can be distinguished from the genuine characteristics of the personality. Methodical abilities include planning, and organizational and leadership skills, in which relevant experience and talent often complement each other. Schumpeter (1949:257) stresses the importance of a „distinct business ability, which includes aptitude for efficient administration, for prompt decisions, and all that sort of thing“. It is this kind of ability, which is essential as „successful survival of difficult situations and success in taking advantage of favorable situations is not merely a matter of luck“. Actual personal traits of the entrepreneur referred to by Schumpeter are a strong internal drive, the enjoyment of creativity, the desire for activity and the motivation to achieve above-average performance (Schumpeter 1912:143ff).

A number of psychologically orientated empirical research projects have been dedicated to the personal traits of (successful) entrepreneurs (cf. McClelland 1961; Hornaday and Aboud 1971; Chell, Haworth and Brearley 1991). The most important traits can be summarized under three headings: 1. The need for achievement, which includes the will and the force to overcome obstacles by one's own effort, in order to reach the goals which one has set for oneself. 2. The internal locus of control, which is associated with the belief that an individual has decisive influence on his own fate and includes self-confidence and a basic optimism. 3. The willingness to take intermediate-level risks and the ability to deal with uncertainty. To what extent risk-taking among entrepreneurs is actually larger than among comparable groups is, however, empirically less clear. It seems that, subjectively, a new enterprise may not be judged as extraordinarily risky, if the entrepreneur has sufficient confidence in his/her own abilities.

### **Entrepreneurship and changing cultural patterns**

The numerous new contributions in sociological, psychological and economic research on the topic of entrepreneurship/intrapreneurship, the hundreds of popular education and training possibilities and the many relevant political formulas illustrate that this concept has not lost its importance since Schumpeter's time. On the contrary, entrepreneurship is very fashionable<sup>1</sup>. From the perspective of Schumpeter this is by no means self-evident. In view of the evolving bureaucratization of the economy and standardization of the innovation process, he expected the importance of the personal creative force to decrease with the innovative progress being delegated to technical specialists (Schumpeter 1947:229ff).

Schumpeter outlines the development of the “organized modernity” with its far-reaching conventionalizations (Wagner 1994). The “restricted liberal modernity” in the 19th century was the high point of the classical entrepreneurial personality and the highly esteemed, pioneer, creative power of the „inner-directed man“(Riesman 1950). The evolution of the societal

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<sup>1</sup> An appropriate search in the literature brings hundreds of results, an internet-search for relevant terms thousands of valid hits. A few dozen journals deal exclusively or partially with the topic of entrepreneurship, among them many new publications.

formation, which is described by Wagner as “organized modernity”, is however characterized by a strong tendency towards standardization of production, homogenization of behaviors, and normalization of work and consumptional patterns. Riesman calls the appropriate dominant character “other directed”. This „organization man“ (Whyte 1957) looks less like a pioneer driven by an internal mission, and more like a devoted and conforming administrator and consumer.

The social changes which took root in the 1970s led to a renewed “extended liberal modernity” (Wagner 1994). With the disintegration of the cultural, political and economic traditions of the “organized modernity”, space for new liberties opened up and the demands for individual responsibility and reflexivity increased once more. On the other hand, a whole set of securities and certainties belonging to organized modernity were abandoned (Beck 1986; Giddens 1990). The „organization man“ has been replaced by the „new individualist“ (Leinberger and Tucker 1991). His model is the figure of the artist, who is able to combine the private ideal of autonomy and creativity with a socially recognized role. Against the background of this new cultural self-understanding, the intensified interest in entrepreneurship is not at all surprising. The entrepreneur is the artist of the economic sphere. Highly valued post-traditional keynotes, such as openness towards new situations and creative power, as well as the demand for subjectivity, independence and the individualized competition for economic success, are embodied in the model of the entrepreneur. Inseparably connected with the above-mentioned cultural re-orientation is the structural dimension of the change towards an “extended liberal modernity“. The new structural conditions, which are the determinants of the working sphere, are examined in the following section.

### **The new world of work**

There is considerable agreement between social scientists that the second half of the 20th century is characterized by a far-reaching, or even radical, change in the working sphere. In the sociological discourse, four related dimensions of this change can be differentiated:

1. On the level of the economic system, the replacement of “organized” “Fordistic capitalism” by the “post-Fordistic accumulation regime” of “disorganized capitalism” has been diagnosed, or is at least expected, for the near future (Offe 1985; Halal 1986; Lash and Urry 1987; Jessop 1989; Harvey 1990). The transformations on the structural and organizational levels as a whole are judged to be serious enough to allow a new basic logic of economic action to be derived.
2. On the level of the economic structure, the transition from the industrial society to a postindustrial society has been discussed (Touraine 1969; Bell 1973). This transition includes not only crucial sectorial shifts, but also a reorganization of the occupational structure. Other versions of the postindustrialist thesis run under the title of the service economy (Dahrendorf 1964; Gershuny and Miles 1983) or the knowledge society (Drucker 1969). And finally the latest version, under the popular term of the information society, is a reaction to the ever-increasing importance of information technology in recent years. The information society refers to a social formation in which the production, processing and spreading of information becomes the central source of economic productivity and social power (Castells 1996).
3. On the level of the organization, it is claimed that - with the increasing complexity and contingency of the economic environment - the rigid Tayloristic, bureaucratic type of organization is increasingly regarded as inefficient. The necessary reactivity and flexibility are to be achieved by a bundle of measures, aimed at realizing centrally defined goals in decentralized action and decision structures. Both the internal structures and operational processes have to

be transformed and the external relations and enterprise boundaries redefined. This new organizational model can be summarized under the term of “systemic rationalization”, whereby well-known catchwords, such as lean production, lean management, reengineering, flexible manufacturing, empowerment, multi-tasking, total quality management, subcontracting, outsourcing, etc., describe partial aspects of this new (qualitative) stage of rationalization (Atkinson and Meager 1986; Altmann et al. 1986; Baethge and Oberbeck 1986; Bechtle 1994; Schumann et al. 1994a; Boyer 1992; OECD 1996).

4. Finally, on the level of the individual, the consequences of this structural and organizational transition are reshaping the working sphere. The activities, requirements and the self-concept of the employee have changed. The ability and the willingness to exercise self-control within organizational preconditions are now central factors. The redefined organizational framework opens up new space for temporal and functional liberties for the employee, while at the same time raising the performance requirements (Voss and Pongratz 1998). But not only the needs of a changing economic world are determining the new conditions of work. With changing social values and intensified individualism, there is more and more desire for personal development, self-determination and self-manifestation in the working sphere (Baethge 1994; Heidenreich 1996). Employees are increasingly ready to give up the traditional securities and obligations of the old model in favor of the liberties and demands of an individualized working world. Thus social privileges and risks are being partially redistributed.

### **The changing occupational role**

The new working sphere calls for new human beings - or at least for a new understanding of the role of the employee. With the organizational principles in the sense of the systemic rationalization, traditional hierarchies are supplemented or replaced by part-autonomous subsystems. This means, at least for the core of the enterprises, that decisions are decentralized, the division of labor within the organizational units is reduced, and the spectrum of activities and the area of responsibility are expanded. Accordingly occupational roles are to be redefined. The management consultants formulate this in a concise way:

„When a process is reengineered, jobs evolve from narrow and task-oriented to multidimensional. People who once did as they were instructed now make choices and decisions on their own instead. (...) Process performers share many of the challenges and rewards of entrepreneurs. (...) A task-oriented, traditional company hires people and expects them to follow the rules. Companies that have reengineered don't want employees who can follow rules; they want people who will make their own rules“ (Hammer and Champy 1993:65ff).

This shift can be described as a change of emphasis from the old principle of rationalization to one of complexification of occupational roles. While Tayloristic rationalization aimed at the standardization of procedures by means of exactly specified rules, complexification is a consequence of the removal of rules, the demand for more direct responsibility and the accentuation of flexible, customized responses to ever new challenges. The constrained role set of the “old” employee can be described as task-centred, heteronomous and, to a great extent, formalized. The postindustrial employee, however, sees himself confronted with the requirements of a strongly extended role set, which is goal-oriented, more autonomously controlled and even partly individualistically defined (Hage and Powers 1992). In practice, we find increasing expansion of the field of activity, both on the horizontal (merging of different jobs), as well as the vertical plane (integration of management tasks), compared to the strictly Tayloristic system.

“People who will make their own rules” are expected by the management consultants. The complex occupational roles can no longer be prescribed by fixed procedural instructions. But the new autonomy is not to be confounded with the dropping of control mechanisms and the end of organizational rule. It is an autonomy within a certain framework, one's own rules are meant to aid the realization of a prearranged goal. However, the aim of supervision is no longer to secure rule-conform execution of the working process, but to guarantee the results. Drucker (1969: 289) speaks of a “performance-oriented organization rather than an authority-oriented organization”. Post-traditional organizational rule in this sense means: roping the conceded individual autonomy in for the goals of the organization by effective control of the performance (Bechtle 1994; Voss and Pongratz 1998). Despite these conditions, the new principles of organization increase the possibilities for highly qualified employees to realize subjective expectations within the working sphere.

### **Changing qualification requirements**

Complexified occupational roles call for employees with different abilities. Again, these have been concisely formulated by the management consultants: “If the old model was simple tasks for simple people, the new one is complex jobs for smart people, which raises the bar for entry into the workforce. Few simple, routine, unskilled jobs are to be found in a reengineered environment” (Hammer and Champy 1993). Empirically two dimensions of change in qualification requirements can be discovered on the labor market. On the one hand, an upward shift in the minimum formal qualifications and, on the other hand, a shift towards more informal qualifications and personal abilities that do not necessarily correspond to the customary formal degrees and diplomas (OECD 1996:146).

The general upskilling regarding formal qualifications seems to shape development in all OECD countries (OECD 1998:53f; Arnal, Ok and Torres 2001) and is clearly confirmed by our data on the development of the Swiss labor market in the period 1950 – 2000 (Salvisberg 2001). The overall rising qualification requirements are therefore a consequence both of the structural shift towards high-quality services, and of rising demands within the individual industries and occupations. But important shifts are not only expected regarding the “hard skills”. New “soft skill” requirements are not a question of rising standards but rather of changing quality. While the “industrial age” stresses the capability to make correct use of an acquired system of rules, the “postindustrial age” puts emphasis on the ability to modify existing rules and to invent new ones. In the postindustrial age, creativity becomes the crucial quality of mind (Hage and Powers 1992:70f).

The popular discussion on “key competencies” stresses both the hardly foreseeable changes, which shape the post-traditional working sphere, and the ever more complex fields of work (Mertens 1974; Reetz 1990; Beck 1995). Under such circumstances those qualifications which can serve as “keys” to different activities will gain in importance. These competencies are less dependent on formal education, but refer much more to appropriate characteristics, which are closely associated with the personality. Therefore methodical competencies can be differentiated from personal traits. Methodical competencies are meta-competencies and refer to the handling of generalized problems. Communication, organization, planning or leadership are among them. Personal traits in the closer sense relate to individual patterns of behavior, to motives, values and attitudes.

However, the demand for such universal characteristics is not new, although the traditional labor virtues stressed the reliability of task-execution and loyalty to the employer. Correctness, diligence, cleanliness, seriousness and friendliness are also among them. Post-traditional key-competencies correspond much more to the demand for comprehensive self-control under

circumstances of increased autonomy. Initiative, independence, dynamics, mental agility and business thinking gain crucially in significance.

The proximity of such concepts to the ideal type of entrepreneur is not at all surprising. While the classical labor virtues are tailored to suit the "other directed man" under conditions of organized capitalism, the new soft skills describe the "new individualists" of the post-Fordistic era. A recapitulation of Schumpeter's description of entrepreneurs clearly points out the parallels: first, the entrepreneur is someone who finds creative responses. Relevant key competencies include creativity and openness. However, in order to transform an idea or invention into an innovation, other specific qualities are essential. The will and the need for achievement and a strong internal drive are the personal prerequisites of the entrepreneur. Furthermore, practical business abilities are indispensable in order to bring the internal drive efficiently and effectively into action.

What is really new about the ideal image of the post-Fordistic employee compared to the Schumpeterian entrepreneur is the generalization of the demand for corresponding qualities. There are no longer just a few, exceptionally strong personalities who befit the heroic role of innovator. According to the corresponding hypotheses on change in the world of work towards the end of the 20th century, every employee will have to become a small entrepreneur. In fact, if one extends this perspective beyond the working world, then every human being will become his own life-entrepreneur, and will be permanently forced to seek creative responses to the changing conditions at work, in the family and leisure. The traditional corset, which allows purely adaptive responses, has long been removed by the new individualists in their own interests. The "entrepreneurial society" does not mean a society of small-business owners, but a society in which entrepreneurial challenges are universally experienced and the entrepreneurial spirit becomes the main ideal of successful life management.

### **Implementation of the new principles of organization**

The question arises here, of course, as to whether a realistic picture of the working world in the core nations at the beginning of the 21st century is reflected in the postulated development. As far as the diffusion of new forms of work organization is concerned, the empirical results show a disparate picture<sup>2</sup>. This can be summarized as follows: 1) Despite large, national, sector-specific and company differences, a clear trend towards implementation of the new principles of work organization can be established in the sense of a systematic rationalization. The new production concepts are indeed spreading and, in fact, in some areas a fundamental change is occurring. 2) Despite these trends, the great breakthrough of the new principles of organization has not yet taken place. Up to now the majority of employees appears to be affected by the above-mentioned developments only to a limited extent or not at all. 3) What can be established, however, is a real heterogenization of project and employment structures. The functional flexibility, which the enterprises are striving for, is in fact partially resulting in an organizational reorientation, where more complex tasks are performed by more highly qualified employees for corresponding rewards. On the other side, the struggle for numerical and financial flexibility tends to even out varying working conditions. This also encompasses peripheral and/or de-standardized employment conditions in the enterprises themselves or with the suppliers. Yet the different occupations are not equally affected by this de-

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<sup>2</sup> For the development in Germany, see Kern and Schumann (1984), Campbell (1989), Schumann, Baethge-Kinsky and Neumann (1990), Schumann et al. (1994a; 1994b). Summaries and information concerning international studies are presented by Boyer (1992), OECD (1996), Lindbeck and Snower (2000), Arnal, Ok and Torres (2001). More critical contributions include Thompson and Warhurst (1998) and Felestad and Jewson (1999).

velopment. While the working conditions are differentiated, the labor market is becoming even more segmented because of it.

These empirical findings also indicate that one cannot talk of a wide diffusion of the new production concepts until the 1990s. In contrast, the end of the "organized modernity", and the related Fordist pattern of economic activity, is generally set in the early 1970s. In this division of periods, the approximate 20 years between 1970 and 1990 appear to be a phase of radical changes and formation. The model showing longer waves in social development from Bornschier (1996), which is based on numerous empirical indicators, describes the 1970s and 1980s as a transitional period as well. The „neocorporatist, Keynesian societal model“ – which corresponds approximately to the "organized modernity" from Wagner – is noticeably losing ground. At the same time, the contours of a new societal model are emerging, without a new homogenous institutional arrangement being recognizable.

In our survey, we try to answer the question about the formation of a post-traditional economic system, and the related entrepreneurial society, on the basis of the entrepreneurial qualities required by the labor market. If the job and production structures, as well as the cultural model linked to them, have developed in the direction sketched here over the past 50 years, then we may expect, *firstly*, a significant revaluation of the corresponding skills, abilities and personal traits. *Secondly*, this development could be expected to make itself noticeable in the 1970s and 1980s and then gain accelerated acceptance from the 1990s. *Thirdly*, at the same time, activities in dynamically developing professional areas and jobs in the core of the economy could be expected to be affected sooner and more considerably than those in peripheral areas.

## **Data and method**

As *data source*, a sample of job ads was prepared, including some 30,000 job offers, published in the years 1950 to 2000 in Swiss newspapers. The sample contains 500 ads per year, which were stratified according to the region of publication and the circulation. Weighting for the entire base selected guarantees the representativity of the ads included for German-speaking Switzerland. Job ads contain a wealth of information about the company seeking an employee, about the vacant position and the demands on the person concerned. The standardized form and the availability over a long period of time make job ads an extremely promising source for the social sciences. They are especially useful for creating indicators, for which no statistics, or at least no comparative statistics over a longer period of time, exist. In their totality, the ads reflect the demand on the labor market in an extremely differential way: on the one hand with regard to the total number of vacant jobs, divided into the individual sectors and occupations, and on the other hand, qualitatively, with regard to the formal and informal demands which are made. In the development over time, short-term economic fluctuations can be distinguished from long-term structural change.

After drawing the sample and recording the ad texts, important basic information was first entered into a data bank by a manual coding process. This data bank contains details of the companies making the ad (e.g. sector, size), of the vacant position (e.g. occupation, activity) and of the person required (e.g. formal education, sex). The soft-skill requirements and personal characteristics are measured by means of quantitative content analysis (Krippendorff 1980; Riffe, Lacy and Fico 1998). For this purpose, a comprehensive dictionary was created, which summarizes the concepts encountered in the employee descriptions in about 200 synonym categories.

A selection of these word categories is grouped to build the dependent variable used for further analysis. Resulting from the observations described above, our dependent variable – en-

entrepreneurial qualities – should include the following three dimensions (the number indicates the frequency with which job ads mentioned the corresponding dimension):

- 1) *Innovativeness*: creativity, fantasy, openness towards new situations, courage, mental agility, initiative (1633).
- 2) *Skills and abilities*: leadership qualities, intelligence and ability to make decisions, organizational and planning ability, communication talent (1258).
- 3) *Drive*: commitment, achievement- and success-orientated attitude, ability to assert oneself, motivation and enthusiasm, dynamism (1934).

In accordance with the expectations formulated above, the description and analysis of these entrepreneurial qualities evolves in two steps: First, the temporal development over the years 1950 to 2000 will be presented. Secondly, the explanatory strength of different structural and temporal variables will be checked in a multivariate regression model (Menard 1995). For this purpose a set of explanatory variables has to be defined as follows:

*Time*: We expect significant changes over time. As a variable for the constant development, a *linear trend* was defined which increases by 1 every year. Its mean is set at 0. As variables for the expected discontinuity of development, two break-variables were defined. *Break 1970* was set at 0 for 1950 to 1970, and then increases by 1 every year, *break 1990* does the same from 1990.

*Job characteristics*: We expect varying development in the different labor market segments. Differences with regard to the horizontal structure of the labor market are reflected by dividing it into 13 different *occupational groups*:

- agricultural jobs
- jobs in the building industry
- jobs in the food and textile industry
- jobs in other industries and trade
- technicians and specialists (e.g. architects, engineers, hard- and software specialists)
- jobs in transport, warehousing and security
- salespeople
- office jobs
- jobs in service industries (e.g. banking, insurance, marketing, research & development)
- jobs in hotels, restaurants and households
- jobs in cleaning, hygiene and cosmetic body care
- jobs in the health service, education and the media
- other activities (indefinite occupations such as “employee” or “worker”)

The *vertical splitting* of the labor market into core and peripheral areas includes three dimensions:

- *Executive function*: jobs, which include management functions vs. jobs without
- *Conditions of employment*: normal employment (full time, unlimited) vs. limited and part-time jobs
- *Qualification requirements*: jobs, which require formal vocational / professional training vs. jobs without formal requirements (unqualified labor market).

Finally two *control variables* should be included. These variables are not discussed in the theoretical framework. In fact, they are hardly ever mentioned in the context of changing occupational roles and shifting soft skill requirements. The first variable will be *gender*. We know that the world of work is strongly segregated. There are occupations, activities, qualifications and working conditions typically connected with male jobs or with female jobs (Brad-

ley 1989; Reskin and Padavic 1994). In German nearly all occupational labels are gendered. Therefore anyone looking for a new job knows whether the preferred person for a certain job is a woman, a man or whether this is not of importance. In our multivariate analysis we will thus include the variable gender with three distinctions: masculine / feminine / masculine or feminine. As we are going to include in our analytical model the differences relating to the horizontal and vertical splitting of the labor market, we may expect that the remaining segregation is of little importance – if at all.

The second variable to be added will be the *economic situation*: As qualitative developments on the labor market mostly vary with economic fluctuations (for the Swiss labor market see Salvisberg 2001), the labor market situation – as measured by the total number of job ads per year – will be considered as a control variable. In a model which is controlled for the occupational structure, we normally find that qualification requirements are altering contrary to the economic situation: a declining number of jobs on offer is connected with increasing qualification requirements and vice versa. A strong negative correlation between economic fluctuations and the request for entrepreneurial qualities could indicate that this kind of requirement is used mainly as a filter. Table 1 lists the quantitative information about our data and the independent variables.

**Table 1: Distribution of Data According to Different Labor Market Segments and Job Characteristics**

<b>Occupational groups</b>	Freq.	Percent	<b>Job characteristics</b>	Freq.	Percent
agriculture	550	1.8	without management functions	29,388	95.3
building industry	3,269	10.6	with management functions	1,465	4.7
food and textile industry	1,124	3.6			
other industries	5,052	16.4	part time / limited jobs	5,523	17.9
technicians and specialists	1,569	5.1	full time / unlimited jobs	25,330	82.1
salespeople	2,988	9.7			
office jobs	3,905	12.7	without formal training	18,333	59.4
service industries	483	1.6	with vocational training	12,520	40.6
transport, warehousing, security	2,349	7.6			
hotels, restaurants, household	6,972	22.6	<b>Gender</b>		
cleaning, hygiene, cosmetic body care	1,036	3.4	feminine	11,961	38.8
health service, education, media	1,091	3.5	masculine or feminine	4,001	13.0
indefinite occupations	464	1.5	masculine	14,891	48.3
			<b>Total</b>	<b>30,853</b>	<b>100.0</b>

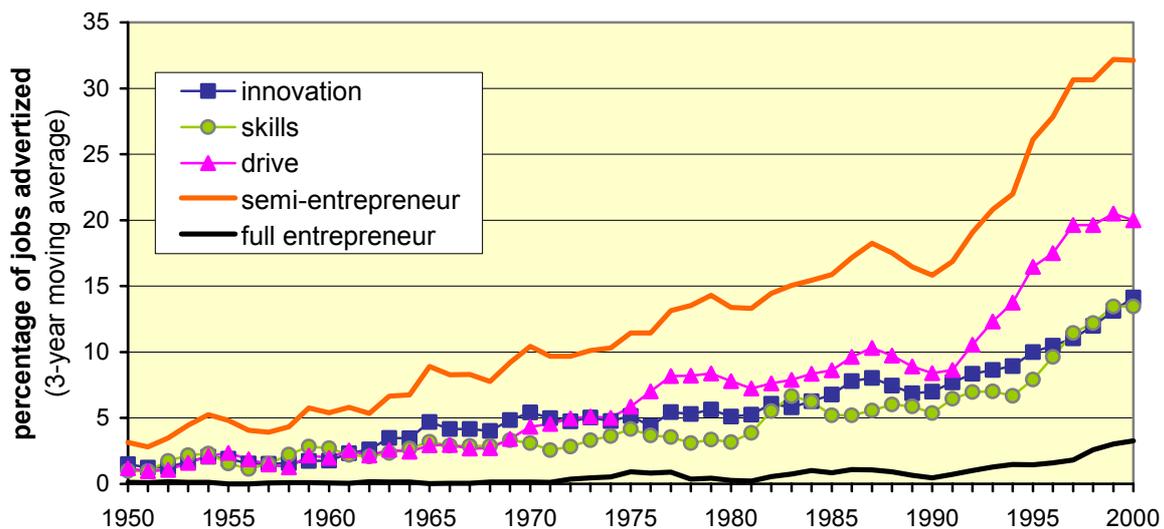
## Results

### Development over time

The postulated spread of entrepreneurial ideals and the introduction of new forms of work organization lead us to expect that the demand for entrepreneurial qualities is increasing significantly over time. Figure 1 illustrates this development for the years 1950 – 2000. All three dimensions of entrepreneurial qualities show the same pattern: a moderate linear upwards trend from 1950 to 1990, which afterwards very clearly becomes steeper. Thus, the three qualities not only follow the same course over time, but also, up to the beginning of the 1990s, they are requested with comparable frequency. It is only since the last few years of the 20th century that the demand for "drive" gains greater importance than the other two dimensions.

In the following observations, we shall distinguish between the "full entrepreneur", who must possess all three qualities and the "semi-entrepreneur", from whom at least one is required. Jobs which demand a full entrepreneur are extremely seldom. Up to 1992, this concerned not more than 1% of jobs and, even in the last two years of the survey, only a good 3%. Apparently the full entrepreneur is still a species which is seldom required in job ads even at the end of the 20th century. However, from 1990 onwards one could speak of a definite growth trend. Distribution of the demand for the semi-entrepreneur is completely different. Here the pattern of development of the individual qualities is repeated at the higher level: a definite linear increase up to the beginning of the 1990s, when it suddenly changes to much steeper growth. This development is not only obvious, but also substantial: while in the 1950s an entrepreneurial quality is only required in about 5% of the jobs, in the mid 1970s this is the case in over 10% and at the end of the 20th century in about a third of all jobs. Altogether it can be established that entrepreneurial qualities have – as expected - gained importance in the last 50 years. A combination of all qualities, however, remains a particularly rare requirement. By observing the course over time, it can be said that the break at the beginning of the 1970s is not discernible, although the one around 1990 indeed is. For the period before that, a linear trend would appear to describe the development best.

**Figure 1: Entrepreneurial Qualities 1950 - 2000**



### Occupational structure and job characteristics

We expect differing frequency of the demand for entrepreneurial qualities for the individual labor market segments. As the occupational structure itself changes with time, the question arises as to whether the observed increase in the demand for entrepreneurial qualities really relates to the new requirements in the specific occupation, or whether this development is more likely to be the result of a shift within the occupational structure. The importance of the development over time and the influence of structural variables are therefore to be examined in a multivariate model. As dependent variables, we distinguish between the "semi-entrepreneur" (where at least one entrepreneurial quality is requested) and the "full entrepreneur" (which combines all three dimensions of entrepreneurship).

As explained above, three variables are used to capture the time components: a linear trend, as well as breaks around 1970 and 1990. The model calculations show that, of these variables, only the linear trend and the break around 1990 are of significant explanatory value. The eco-

conomic cycle – which was included as a control variable – has no significant effect either. In addition there are the horizontal (occupational structure) and the vertical labor market structure (job characteristics: three variables), as well as gender, as explanatory variables. The full models also include the interaction terms of these variables with the linear trend. In this way, we deal with the question of whether the observed effects are constant over time. Table 2 shows the results of the multivariate logistic regressions. Two models, “semi-entrepreneur 2” and “full entrepreneur” include the full set of variables (insignificant interaction effects are omitted), while “semi-entrepreneur 1” includes only the gender interaction effect.

Model 1 has the advantage of being much easier to describe without the results being affected in a substantial way. Therefore we shall use this model in an attempt to present the results of the regression in an easily readable way. Derived from the model “semi-entrepreneur 1” in table 2, the bars represent the estimated probability that at least one entrepreneurial quality is required<sup>3</sup>. In this way we get a general idea of the variations between the different dimensions of the variables concerning the prevalence of entrepreneurial qualities. All variables presented contribute significantly to the explanatory power of the model, whereby of all the structural variables the occupational structure is shown to be the most important, followed by gender and the variables which refer to the horizontal dimension of the labor market: management function, full time / unlimited job and qualification requirement<sup>4</sup>. We will first examine in detail the “semi-entrepreneur” models and then have a look at the third model “full entrepreneur”.

Despite the important influence of the structural variables, the linear trend and the break around 1990 remain as significant explanatory quantities in the model. The development observed in Figure 1 is, therefore, not simply the result of a shift in the structure of the occupational and labor market. In other words, for a job which does not vary with regard to the occupational group, management function, conditions of employment and educational prerequisite, there is nevertheless a greater demand for an entrepreneurial quality from year to year. Let us look at the example of a full-time, unlimited office job, without management functions, for which vocational training is required and which is advertised for a man. The probability according to our model that this job will require at least one entrepreneurial quality is 24% in 1950, 37% in 1975 and as much as 58% in the year 2000<sup>5</sup>.

As expected, the structural characteristics of the jobs prove to have significant influence as to whether one of the entrepreneurial qualities is sought in a job ad or not. And this applies both for the horizontal dimension with regard to the various occupational groups, as well as for the vertical dimension referring to the job characteristics. Should our example refer, not to an office job, but to work in the transport business, then the probability in our model in the year 2000 is only 45%, and for a job in the building industry not more than 12%.

Less surprising than this quite significant difference between the occupational groups are the differences along the vertical structure of the labor market. The effect is most obvious, when the job is connected with management functions. If this is the case, the probability in the above example increases from 58% to 77%. If the advertised job refers, however, to a typical job in the periphery of the labor market, i.e. a part-time job, for which no formal training is

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<sup>3</sup> The estimated probability is calculated by the formula  $p(y=1) = 1/(1+\exp(-z))$ ; where  $z = B_0 + B_1x_1 + \dots + B_nx_n$ .  $B_i$  are the regression coefficients,  $x_i$  the respective values of the independent variable. The total (and thus the mean) of the regression coefficients for each variable is 0. The values in figure 2 express the respective estimated conditional probability while the coefficients of the other variables are set at 0, i.e. to their mean value.

<sup>4</sup> In this order, based on likelihood ratio statistics.

<sup>5</sup> All detailed estimated probabilities specified in the text are calculated from the full model (“semi-entrepreneur 2”).

**Table 2: Logistig Regression Analysis Results for Prevalence of “Semi-“ and “Full Entrepreneurs”**

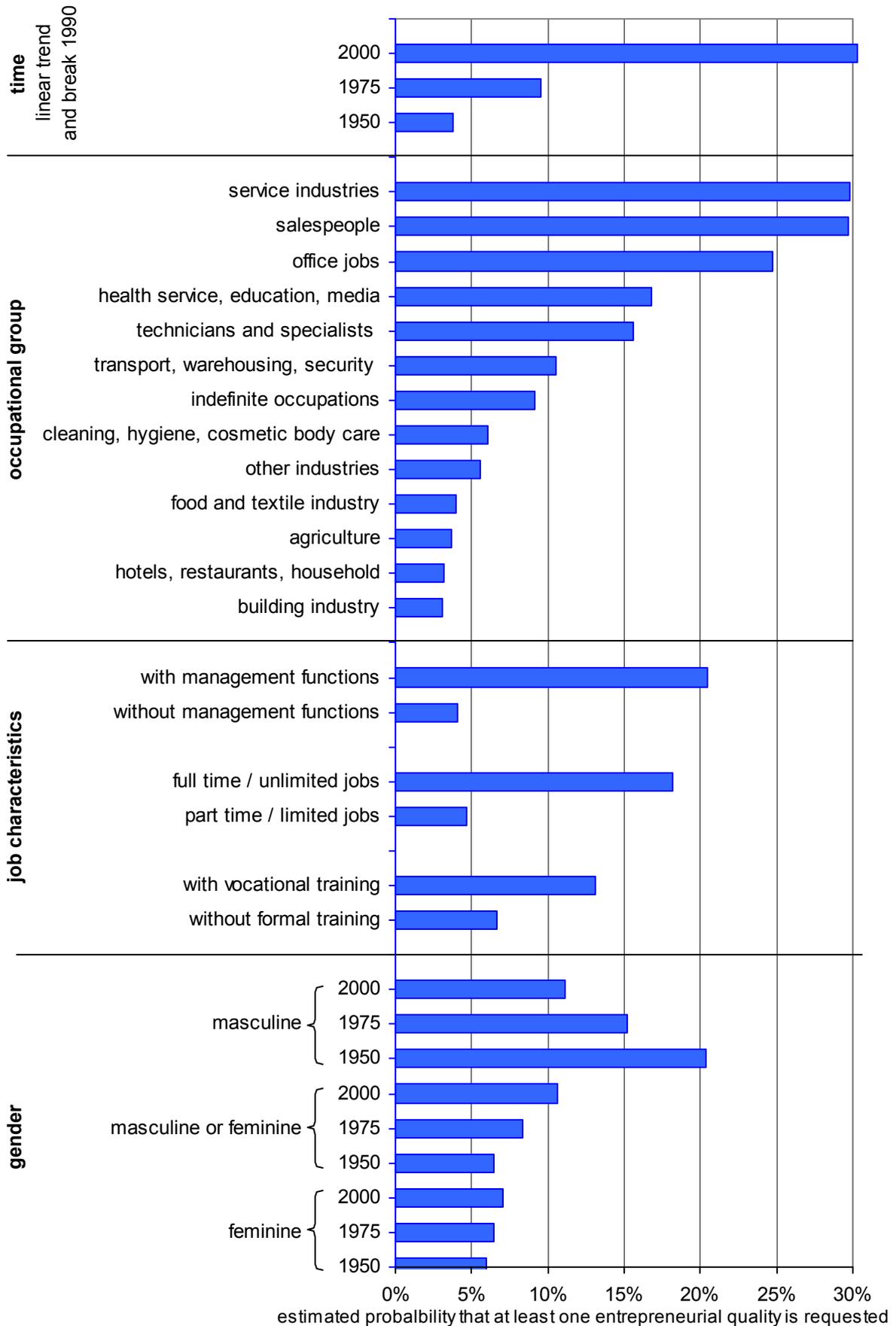
	Semi-Entrepreneur 1			Semi-Entrepreneur 2			Full Entrepreneur		
	B	S.E.	Sig	B	S.E.	Sig	B	S.E.	Sig
<b>Linear Trend</b>	0.040	0.003	0.000	0.062	0.004	0.000	0.109	0.013	0.000
<b>Break 1990</b>	0.041	0.010	0.000	0.028	0.010	0.006			n.s.
<b>Occupational Group<sup>1</sup></b>			0.000			0.000			0.000
agriculture	-1.013	0.215	0.000	-1.252	0.269	0.000	-4.856	17.039	0.776
building industry	-1.189	0.084	0.000	-1.111	0.089	0.000	-0.671	2.383	0.778
food and textile industry	-0.914	0.154	0.000	-0.931	0.166	0.000	-4.241	11.477	0.712
other industries	-0.563	0.061	0.000	-0.480	0.065	0.000	-0.918	2.375	0.699
technicians and specialists	0.580	0.067	0.000	0.624	0.078	0.000	2.275	2.270	0.316
salespeople	1.404	0.054	0.000	1.513	0.060	0.000	3.436	2.266	0.129
office jobs	1.154	0.054	0.000	1.264	0.060	0.000	3.141	2.265	0.166
service industries	1.407	0.098	0.000	1.512	0.113	0.000	3.417	2.274	0.133
transport, warehousing, security	0.128	0.073	0.081	0.148	0.078	0.057	-0.023	2.402	0.992
hotels, restaurants, household	-1.138	0.094	0.000	-1.324	0.119	0.000	-0.821	2.615	0.754
cleaning, hygiene, cosmetic body care	-0.484	0.157	0.002	-0.574	0.195	0.003	1.157	2.522	0.647
health service, education, media	0.666	0.087	0.000	0.616	0.122	0.000	2.369	2.293	0.302
<b>without / with Management Function<sup>2</sup></b>	0.905	0.065	0.000	0.912	0.066	0.000	1.376	0.185	0.000
<b>full time, unlimited / part time, limited<sup>2</sup></b>	-0.763	0.064	0.000	-0.743	0.064	0.000	-1.556	0.468	0.001
<b>with / without Vocational Training<sup>2</sup></b>	-0.372	0.049	0.000	-0.294	0.051	0.000			n.s.
<b>Gender<sup>1</sup></b>			0.000			0.000			0.000
masculine	0.550	0.038	0.000	0.566	0.038	0.000	1.348	0.246	0.000
feminine	-0.410	0.039	0.000	-0.404	0.039	0.000	-0.977	0.343	0.004
<b>Gender*Linear Trend<sup>3</sup></b>			0.000			0.000			0.001
masculine	-0.014	0.002	0.000	-0.017	0.003	0.000	-0.051	0.013	0.000
feminine	0.004	0.003	0.171	0.005	0.003	0.078	0.032	0.019	0.087
<b>Occupational Group*Linear Trend<sup>3</sup></b>						0.000			n.s.
agriculture				0.052	0.017	0.002			
building industry				-0.016	0.007	0.024			
food and textile industry				0.015	0.013	0.228			
other industries				-0.018	0.005	0.000			
technicians and specialists				-0.007	0.006	0.223			
salespeople				-0.020	0.004	0.000			
office jobs				-0.022	0.004	0.000			
service industries				-0.019	0.008	0.021			
transport, warehousing, security				0.002	0.006	0.722			
hotels, restaurants, household				0.025	0.008	0.001			
cleaning, hygiene, cosmetic body care				0.011	0.013	0.392			
health service, education, media				-0.003	0.008	0.697			
<b>Vocational Training*Linear Trend<sup>3</sup></b>				-0.019	0.004	0.000	-0.057	0.017	0.001
Constant	-2.265	0.049	0.000	-2.390	0.055	0.000	-8.623	2.271	0.000
-2 Log-Likelihood			17938.136			17857.084			1340.733
Model Chi-square			4775.154			4856.206			595.526
df			21			34			20
Nagelkerke R-square			0.275			0.280			0.314

<sup>1</sup> deviation coding; reference are „indefinite occupations“, resp. „masculine or feminine“

<sup>2</sup> dichotomous variables (0 / 1)

<sup>3</sup> interaction terms (other interactions with linear trend are not significant)

**Figure 2: Semi-Entrepreneur: Determinants**



required and with which no supervisory function is connected, then the probability is only 20% if the job is advertised for a man. For such jobs, however, companies often explicitly look for women. In that case the probability that an entrepreneurial quality is required falls to as little as 15% in the year 2000. In order to stress once more the extent of the change over time: the respective value in the year 1950 is 4%.

Despite the control of the effects according to horizontal and vertical segmentation, gender still turns out to have strong influence when it comes to ascertaining whether a certain job is connected with the demand for entrepreneurial qualities. If our office job in the year 2000 is not advertised for a man, but for a woman, the probability falls from 58% to 48%. In other words, the gender of the employee accounts statistically for almost as much as the difference between an office job and a job in the transport business. For an unqualified job in the hotel and restaurant industry, for which typically a woman will be sought, the probability that one entrepreneurial quality is required amounts in the year 2000 to only 5%.

Considering the importance of the gender effect, the question arises as to whether this will lose in significance during the course of the dissolution of gender barriers with regard to work. To examine this assumption, the model was supplemented with an interaction effect. This demonstrated that the interaction of *feminine* and *trend* showed no significant correlation, that of *masculine* and *trend* a considerable, negative correlation. This means that in the course of time entrepreneurial qualities are less related to jobs which are advertised for men only. In time the formulation of such job ads will be increasingly non-specific as to gender. Figure 2 shows this development nicely. Finally the difference between explicitly masculine and non-specific jobs is no longer significant. The actual women's jobs were and are not affected by this.

Including further interaction terms does not alter the present results in a substantial way, but adds new insights. The interactions of the linear trend with the occupational group and with the formal qualification requirement are of statistical relevance. Altogether the differences between the occupational groups get quite a bit smaller with time. Salespeople and office jobs especially are considerably losing their lead and jobs in restaurants and hotels as well as agricultural jobs are catching up. This development shows the process of diffusion of the new soft skill requirements: while the order of precedence stays the same, the distance is shrinking. Our example may illustrate this: while the expected probability for office jobs changed from 24 to 58% in 50 years, the change for a job with the same conditions in a restaurant would be from 1 to 25%. The question of whether formal training is requested or not loses significantly in importance with time, and this can also be interpreted as a process of diffusion. But at least as important will be the fact that the total number of jobs without formal qualification requirement is considerably decreasing.

Above, in the description of the development over time, we have seen that the full set of entrepreneurial qualities is seldom requested. The small number makes the logistic model somewhat less informative ("full entrepreneur" in table 2). So there are no statistically significant differences between the different occupational groups. Important for our interpretation is the fact that all observed effects are in principle the same as in the semi-entrepreneur model. Examining the effects of the management function, the part time or limited jobs and gender, we see that these effects are in the same direction, but quite a lot bigger than for the semi-entrepreneur. So the full entrepreneur seems to be a kind of more specific semi-entrepreneur. With regard to the temporal development, the main difference is that the break around 1990 is not significant in the full entrepreneur model, but the effect of the linear trend is much stronger.

## Summary and conclusions

Starting point for our analysis was the question of whether or not an "entrepreneurial society" began to form in the second half of the 20th century. Not a society of small business owners is meant here, but rather a society in which entrepreneurial qualities become the central, highly valued personal characteristics - and this not only for the self-employed, but also for the great majority of employees. The background to this development in the world of work is the structural and organizational change. We assume that in the course of the post-Fordistic reorganization of work, the employee's occupational role will be radically redefined. This redefinition can be described as a shift away from the old principle of standardization to one that emphasizes the complexification and extension of occupational roles. The new role requires a new kind of employee, as the employee is now challenged by demands similar to those faced by an entrepreneur. Accordingly employers are modifying their job requirements.

Following on from Schumpeter's definition of the entrepreneur, we distinguished between three dimensions of entrepreneurial qualities: innovativeness, methodical skills and drive. The frequency of the corresponding requirement in the Swiss job ads between 1950 and the year 2000 is interpreted as an indicator of the prognosticated development. This shows us a differentiated picture:

1) Long-term trend: The expected development over time is definitely confirmed: all three dimensions of entrepreneurial qualities are clearly sought more frequently over the years.

2) Temporal pattern of development: Basically a linear increase from 1950 to 1990 can be distinguished from the clearly accelerated development in the 1990s. If, on the basis of this information, one wishes to locate the point in time of the break between "Fordist" and "post-Fordist" economic systems, then this must be set at 1990. It must be emphasized, however, that this is less a sudden break than the acceleration of a development that can be followed over the whole survey period from 1950. As far as the demand for a full entrepreneur is concerned, the break around 1990 is less discernible. The observation of rather continuous, if accelerated, development corresponds to a great extent to the empirical results on the distribution of new forms of work organization (see above). The clear break in the first half of the 1970s, postulated by authors whose arguments are rather generalized, is not confirmed by the data available here.

3) Extent of the development: The demand for a full entrepreneur - that means, a person with all three qualities - is extremely seldom over the whole time period. In this sense there is actually no "entrepreneurial society". On the other hand, single qualities are required considerably more often. This demand for a "semi-entrepreneur" shows substantial diffusion. There is no "entrepreneurial society", but a society where entrepreneurial qualities are gaining considerably in importance.

4) Differences relating to occupation: Different jobs are affected to quite a different extent by the demand for entrepreneurial qualities. This applies both with regard to the field of occupation, as well as to the character of the job and the conditions of employment. For the modern service and sales jobs, entrepreneurial qualities are requested with much above-average frequency. In the industrial sector and in personal services, this demand is extremely seldom. Regarding the degree of this difference, we find a clear polarization between different occupations. This split is of all the more interest, as it holds independent of other job characteristics. Regarding the long-term trend, however, the differences between most occupational fields become weaker and, thus, the polarization somewhat less accentuated. There is currently a considerable process of diffusion taking place.

5) Differences relating to function: Most of all the demand for entrepreneurial qualities relates to superior jobs at the core of the enterprise. The details in the ads point to a clear split in the labor market. On the whole the analyzed “soft skills” reproduce the well-known pattern of distinction between highly valued positions and more peripheral jobs. Following the discussion on the varying diffusion of the new forms of work organization, this corresponds quite well with expectations. Apparently, in jobs where the fulfillment of entrepreneurial functions could be expected, the probability that entrepreneurial qualities are required is greater. This is the case for occupations where more responsibility is delegated to the employee and positions with more scope for creativity. This can be taken as an indication that the demand for entrepreneurial qualities is more than merely a fashionable phenomenon.

6) Differences relating to gender: The labor market in Switzerland is – as elsewhere – strongly segregated according to gender. It is, however, surprising that strong differences remain between jobs for men and those for women even when controlling for labor market structure. Entrepreneurial qualities as the companies understand them are obviously typically male qualities. The general trend towards an increasing number of jobs being advertised for both sexes shows itself in that the differences between explicitly male jobs and those for men and women are vanishing. The explicitly female jobs, however, hardly change their character at all in this respect.

In view of the moderate spread of the demand for entrepreneurial qualities and of the three-fold split in the labor market, we have to be very cautious about proclaiming the “entrepreneurial society”. It is, at best, a society in which parts of the working sphere are increasingly affected by the demand for entrepreneurial qualities. These parts are, generally speaking, the most demanding jobs in the most dynamic occupational fields. Here the employee is, in fact, confronted with the challenges of a “semi-entrepreneur”. Perhaps this term captures more than just the incomplete set of personal qualities: one can assume that the number of liberties and possibilities for self-manifestation enjoyed by the “employed semi-entrepreneur” lies somewhere between that of a classical employee and a full entrepreneur. At the same time, the majority of jobs seem to remain more traditional in form than the theories of change would lead us to believe.

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