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Abstract

Market orientation has received substantial academic and practitioner interest over the last decade. However, previous research has not addressed the issue how a company's management systems can be designed in a market-oriented way. Starting from a systems-based perspective of management, the authors develop and validate a scale measuring the extent of market orientation of a business organization's management systems including the organization system, the information system, the planning system, the controlling system, and the human resource management system. Empirical results reveal a substantial positive impact of market-oriented management on market performance which in turn leads to financial performance.

MARKET-ORIENTED MANAGEMENT:

A SYSTEMS-BASED PERSPECTIVE

Market orientation has received substantial academic and practitioner interest over the last decade. However, previous research has not addressed the issue how a company's management systems can be designed in a market-oriented way. Starting from a systems-based perspective of management, the authors develop and validate a scale measuring the extent of market orientation of a business organization's management systems including the organization system, the information system, the planning system, the controlling system, and the human resource management system. Empirical results reveal a substantial positive impact of market-oriented management on market performance which in turn leads to financial performance.

Market orientation as a business organization's orientation towards its customers and competitors has been emphasized as a central key to company success by academics and managers alike. As an example, Harris (1996: 25) points out that "the development of market orientation is accepted as one of the major issues for organizations over the next decade".

Academic research on this topic is still limited however. The management literature is typically focusing on specific research questions such as the implications of market orientation for human resource management (e.g. Mohr-Jackson, 1991) and does not provide an integrated perspective. The marketing literature has looked at selected aspects related to market orientiation including measurement issues, determinants, and performance outcomes. While one group of authors has looked at the construct from a behavioral perspective (e.g. Kohli and Jaworski, 1990; Jaworski and Kohli, 1993), others view market orientation primarily as a cultural phenomenon (e.g. Narver and Slater, 1990). Management issues related to this construct have been widely neglected though.

Our research aims at filling this gap in the literature. More specifically, we introduce a new perspective of market orientation which will be referred to as the systems-based perspective. It conceptualizes market-oriented management in terms of the degree to which management systems are designed in such a way as to promote a business organization's orientation towards its customers and competitors. The notion of management systems here refers to systems which support the performance of basic management functions such as planning, organizing, and controlling. Our research makes two main contributions. First, we develop and validate a new scale measuring the extent of market orientation of the different management systems. Second, we analyze performance implications of market-oriented management.

Such research is highly relevant from both a theoretical and a managerial perspective. Managerial literature has emphasized that the design of management systems is a key managerial activity (Peters and Waterman, 1982). Given the importance of market orientation, the question how management systems can be designed to support market orientation is of high interest for researchers and managers alike.

We start by reviewing the relevant literature in the fields of management and marketing. Next, we provide the theoretical framework of our study and develop a systems-based model of market-oriented management. We then describe our research method and present empirical results on the scale development and the performance outcomes. Finally, we discuss theoretical and managerial implications of our reserach.

LITERATURE REVIEW

Our literature review focuses on two areas. We first review academic management research related to the topic. Then we discuss research from the marketing discipline which has focused on the construct of market orientation.

Management Literature

There are only a few studies which have dealt with the construct of market orientation from a management perspective. Shapiro (1988) identifies the adequate design of organizational structures and processes as a core management task in the context of market orientation. According to his view, functions or divisions of a company inevitably have conflicting objectives which impede the development of a true market orientation. The author argues that management has to find certain mechanisms (e.g. cross-functional teams) which allow for a well-coordinated interfunctional effort.

Mohr-Jackson (1991) studies implications of an organizationwide market orientation for human resource practices. Based on in-depth interviews with corporate executives the author identifies human resource practices that foster market orientation. The field research reveals the particular importance of training, empowerment and reward structures in promoting a market orientation. The results of the study also indicate that human resource management as a whole plays an important role in implementing market orientation because the human resource factors are highly controllable by senior managers (Mohr-Jackson, 1991).

The role of information management in the context of market orientation has been investigated by Shapiro (1988). He claims that in a market-oriented business information on all important buying influences should permeate every corporate function.

Marketing Literature

Over the past ten years, conceptual and empirical research on different aspects of market orientation has been published in the marketing literature. Academic work in this area concentrated on such topics as: (1) the conceptualization of the construct (e.g. Kohli and Jaworski, 1990; Narver and Slater, 1990), (2) the measurement of the construct (e.g. Deng and Dart, 1994; Deshpandé and Farley, 1996; Deshpandé and Farley, 1998; Jaworski and Kohli, 1993; Kohli, Jaworski and Kumar, 1993, Narver and Slater, 1990, 1998), and (3) the antecedents and consequences of market orientation (e.g. Day, 1994; Jaworski and Kohli, 1993; Slater andNarver, 1994).

Kohli and Jaworski (1990) introduced a behavioral perspective on the market orientation construct. Within this perspective, market orientation is defined in terms of behaviors and activities which are typical of an organization's members. Kohli and Jaworski (1990: 3) conceptualized market orientation as the "organizationwide generation, dissemination, and responsiveness to market intelligence", thus focusing on information-related behaviors. Based on this conceptualization, the authors developed a measurement scale and validated it empirically (Jaworski and Kohli, 1993; Kohli, Jaworski and Kumar, 1993). Subsequent research adopting a behavioral perspective of market orientation has been done by Deng and Dart (1994) and Atuahene-Gima (1996).

In contrast to this behavioral perspective, Narver and Slater (1990: 21) suggested a cultural perspective, defining market orientation as "an organization culture (...) that most effectively and efficiently creates the necessary behaviors for the creation of superior value for buyers". These authors also developed a measurement scale and validated it empirically. This scale has also been adopted by other authors (e.g. Greenley, 1995; Pelham and Wilson, 1996). According to Narver and Slater (1990) a thorough market orientation can only be installed by adequately changing company-specific norms and values. Within this context, Narver, Slater and Tietje (1998) point out that businesses which concentrate on the use of training programs and organizational changes often fail in developing such a culture. The authors propose to combine this rather programmatic approach with a so-called market-back approach, an experiential approach in which a business continously learns from its day-to-day efforts to create and maintain customer value. They suggest that the two approaches should be tailored and managed as a well-coordinated joint strategy in order to create a lasting market orientation (Narver, Slater and Tietje, 1998).

Starting from a meta-analysis of three market orientation scales developed by Narver and Slater (1990), Deshpandé, Farley and Webster (1993), and Kohli, Jaworski and Kumar (1993), Deshpandé and Farley (1996, 1998) developed a parsimonious 10-item scale to assess a firm’s market orientation. According to the authors this scale "does not deal with market orientation as a 'culture' but rather focuses on 'activities'" (Deshpandé and Farley, 1996: 13). Illustrative activities within their scale include the collection of customer-related information and the dissemination across all business functions.

Most of the studies analyzing performance outcomes of market orientation have found positive relationships between the degree of market orientation and business performance (Deshpandé, Farley and Webster, 1993; Jaworski and Kohli, 1993; Narver and Slater, 1990; Ruekert, 1992). Performance measures used in previous market orientation research include return on assets (Narver and Slater, 1990), market share (Deshpandé, Farley and Webster, 1993; Jaworski and Kohli, 1993), and growth rate (Deshpandé, Farley and Webster, 1993).

Summary

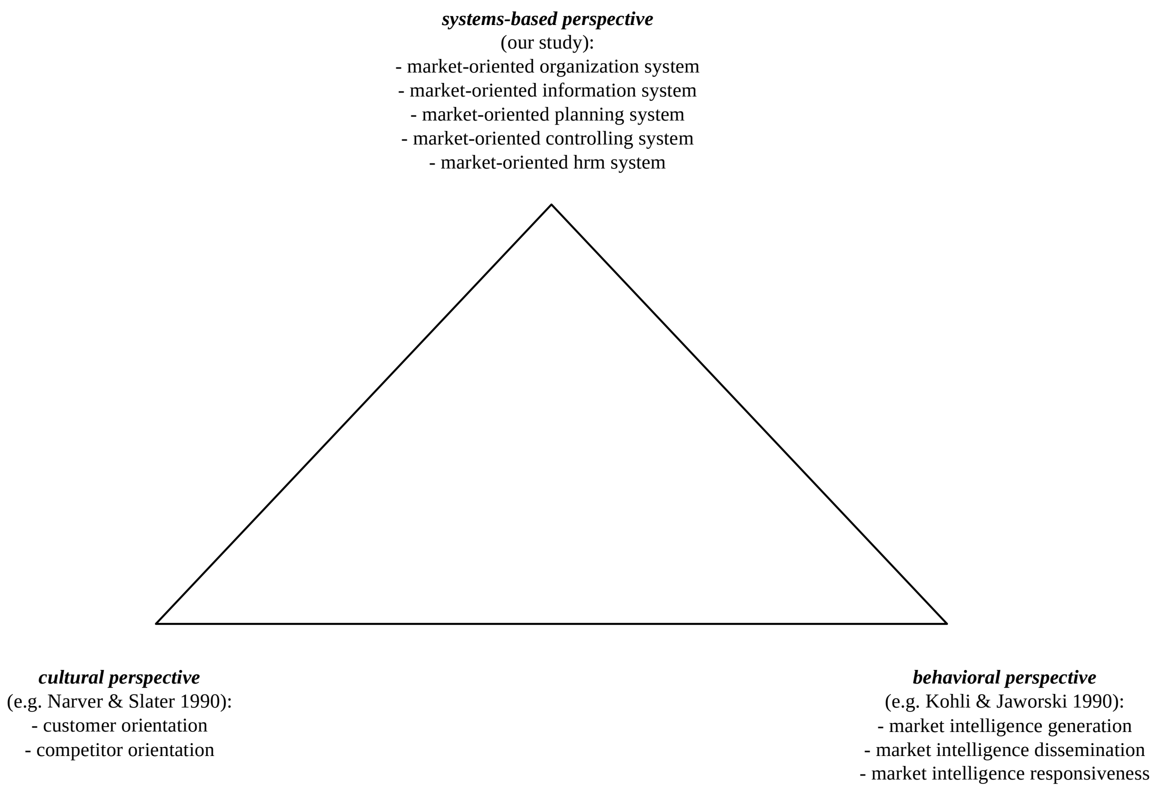
With respect to the management literature, our review shows that there is no integrative conceptualization of market-oriented management. Rather, specific issues such as human resources management have been studied from a market orientation perspective.

Within the marketing literature, two perspectives of market orientation can be distinguished. They include a behavioral perspective which conceptualizes market orientation in terms of behaviors typical of organizational members and a cultural perspective which focuses on norms and values within the organization. A significant number of studies within both perspectives have found positive performance outcomes of market orientation. The important issue how an organization's management systems should be designed to support market orientation has been largely neglected in this literature so far.

Against this background our research suggests a third perspective of market orientation (see Figure 1). It conceptualizes market orientation as the degree to which the different management systems of an organization are designed in a market-oriented way. In accordance with Narver and Slater (1990) we subsume customer and competitor orientation under the construct of market orientation. Our conceptualization will be developed in more detail in the next section.

FIGURE 1

Different Perspectives of Market Orientation



THE MODEL

Theoretical background

The theoretical framework of our model is provided by the systems approach to organizational and management research. This approach derives from the general systems theory which was originally developed by von Bertalanffy (1951). Von Bertanlanffy defined a system as an organized, unitary whole composed of two or more interrelated components and delineated by identifiable boundaries from its environmental suprasystem. The basic idea proposed by von Bertalanffy (1951) was later adopted and modified by several management and organization scientists (e.g. Simon, 1960; Miller, 1972; Kast and Rosenzweig, 1972; Katz and Kahn, 1978; Passmore, 1988). Collectively, these studies argue that a company or a business unit can be viewed as a complex socio-technical system that consists of different interrelated subsystems (Susman, 1976; Passmore, 1988; McLeod, 1995). Simultaneously, it is part of a larger environmental system like a certain industry or even a national economy (Kast and Rosenzweig, 1967).

Systems can be classified according to their relationships with their surrounding suprasystems (McLeod, 1995). While a closed system is isolated from its environment, an open system is involved in various relationships with its environment (Andrew, 1965). According to the open systems view, a system depends heavily on a number of external factors and can only survive in the long run if it adapts to these factors (Hendrickson, 1992). In the case of a business system, both customers and competitors represent important external factors that have a strong impact on the business' operations (Mockler, 1968). By designing the organizational subsystems in a market-oriented way the management of a company or a business unit can assure that those external factors are monitored systematically and that adequate action is taken in time.

Katz and Kahn identify five organizational subsystems which carry out the work of the input-throughput-output cycle: the *productive*, the *supportive*, the *maintenance*, the *adaptive*, and the *managerial system* (Katz and Kahn, 1978). Consistent with the focus of our study, we will concentrate on a discussion of the managerial system. In the next section we will present the core elements of such a managerial system which will be referred to as management systems.

The Management Systems

Several conceptualizations of the different management activities have been suggested in the literature. The classical work by Fayol (1949) views planning, organizing, commanding, coordinating, and controlling as the five basic managerial functions which have to be performed in order to achieve an organization's goals. Smiddy and Naum (1954) focus on three managerial processes, including planning, organizing, and controlling. Massie and Douglas (1977) distinguish seven core processes of managing. According to their perspective, managers make decisions, set objectives, plan, organize and staff, communicate with others, supervise, and control business activities. Planning, organizing, staffing, leading, and controlling are regarded as the basic functional areas of management by Koontz, O'Donnell and Weihrich (1986). Finally, Daft (1991) views planning, organizing, leading, and controlling as the core management activities. Within this author's framework, additional management functions, such as staffing, communicating, or decision making are discussed as subsets of those four primary functions.

Although there are differences between these conceptualizations of managerial tasks, they do have some core elements in common. More specifically, organizing, planning, and controlling are viewed as important managerial tasks by all authors. Some authors also emphasize the importance of communicating and staffing (i. e. human resource management) as separate management functions (e.g. Massie and Douglas, 1977). Several authors have argued that human resource management practices can help to create a source of sustained competitive advantage (Begin, 1991; Porter, 1985; Wright and McMahan, 1992). Similarly, many experts have stressed the importance of managing information as a central key to a firm's competitiveness (Levitt and March, 1988; MacDonald, 1995; McLeod, 1995). Given the importance of managing human resources and managing information we view both tasks as primary management functions. In summary, we will distinguish five major management functions including organizing, informing, planning, controlling, and staffing (i. e. human resource management). Each of these functions is supported by a system within the organization. Accordingly, we distinguish five subsystems of an organization's managerial system.

Organizing is often referred to as the deployment of resources in order to achieve strategic objectives (Daft, 1991). Managerial instruments belonging to the *organization system* include the assignment of tasks and responsibilities to individuals and units as well as the clustering of individual positions into larger units. The various mechanisms used to facilitate vertical cooperation and to foster horizontal coordination (e.g. tasks forces and interdepartmental teams) are also considered as important elements of the organization system (Bartol and Martin, 1998). While the latter are primarily directed towards an optimization of business processes, the first two instruments are used by managers to define the formal structure of a business organization.

The importance of the *information system* as a managerial subsystem has grown substantially over the last two decades. Among other reasons, this is due to the fast development of information technology during this period which has made the use of information much easier (Hinds and Kiesler, 1995). Research focusing on information processing (Huber, 1991; Maltz and Kohli, 1996; Moorman, 1995; Sinkula, 1994) has emphasized that information is acquired, disseminated, and finally stored within the firm. The main task of the information system is therefore to support the acquisition, dissemination, and storage of information on various internal and external factors.

Many authors consider planning to be the initiating force in the management process (Ackoff, 1970; Graham, 1975; Koontz, O'Donnell and Weihrich, 1986). Planning itself is also considered to be a process rather than a single act since earlier decisions often have to be reviewed due to changing market conditions or decisions made subsequent to the initial decisions (Ackoff, 1970). The process of corporate planning basically involves selecting the objectives of an organization, monitoring the environment and finally deciding on how these objectives shall be accomplished (Daft 1991; Koontz, O'Donnell and Weihrich, 1986). The *planning system* provides the appropriate instruments and mechanisms which help the management to carry out these tasks.

The *controlling system* serves to regulate organizational activities so that actual performance conforms to expected organizational standards and goals (Bartol and Martin, 1998; Massie and Douglas, 1977). The controlling system is closely related to all other management systems, especially to the planning system (Ackoff, 1970; Hamper and Baugh, 1990; Koontz, O'Donnell and Weihrich, 1986). The measurement of actual performance represents a core element of any controlling system (Massie and Douglas, 1977). Since we will capture the degree to which market-related performance is measured in our modelling of the information system, we will not elaborate on this issue any further at this point. Typically, the comparison of the actual performance with the expected target represents the next step in the controlling process (Anthony, 1988; Bartol and Martin, 1998; Daft, 1991). Usually, the targets are drawn from the planning system. If the actual performance deviates substantially from the target, an analysis of deviation is conducted. Within our conceptualization of the controlling system we therefore focus on target comparison and analysis of deviation.

Several empirical studies have shown a substantial impact of human resource management policies and practices on a firm's productivity (Gerhart and Milkovich, 1992; Holzer 1987) and financial performance (Terspstra and Rozell, 1993; Cascio, 1991; Flamholtz, 1985). Huselid (1995: 637) points out that "human resource practices influence employee skills through the acquisition and development of a firm's human capital". Five major elements of a *human resource management system* can be distinguished. They relate to recruiting, training, evaluation, career development, and compensation issues (Bartol and Martin, 1998). Recruiting procedures, paired with a reliable and valid selection regimen, have a substantial influence on the quality and type of skills new employees possess. Providing formal and informal training experiences, such as basic skills training, on-the job-experience, coaching, mentoring, and management development can further influence employees' development (Huselid, 1995). Several authors have emphasized that the behavior of employees is strongly influenced by performance evaluation patterns (e.g. Tosi and Hammer, 1982). Choosing the adequate criteria for the assessment of personal performance is therefore a critical management task. Career development programs that are closely linked to performance assessment can help to enhance employee motivation, thereby increasing a firm's productivity (Huselid, 1995). Finally, reward and compensation systems are likely to have a strong impact on the attitudes and behaviors of employees (Hopwood, 1974; Lawler and Rode, 1976). Additionally, several empirical studies have shown that changes in pay programs may influence organizational outcomes (e.g., Murray and Gerhart, 1998). Again, to ensure the effectiveness of incentive systems it is important to closely relate them to performance appraisals (Huselid, 1995).

Market-oriented Design of Management Systems

Having described the relevant management systems and their core elements, we will now discuss in detail how these different systems can be designed in such a way as to represent market-oriented management.

Starting with the *organization system*, we first focus on how the redesign of organizational structures can lead to an increased market orientation. Reducing the number of hierarchy levels within a firm might be viewed as a measure to enhance market orientation. As a consequence, top executives will be forced to get more often and closer in touch with customers, thereby enhancing their knowledge about customer preferences and competitive offers. As a second positive outcome of this measure, response times will be reduced significantly as the number of persons involved in the decision processes gets smaller. Setting up key account managers represents another measure used by many firms striving for more market orientation. McDonald, Millman and Rogers (1997: 737) view key account management as "a natural development of customer focus and relationship marketing". Hout and Carter (1995) point out that in many successful companies senior executives have an active, powerful role. In the context of market orientation this implies that an organizationwide implementation of the marketing concept can only be successful if the management itself acts and leads in a market-oriented manner. Filling key management positions with employees having a strong practical marketing background may therefore help to enhance a company's market orientation significantly because executives with functional experience concentrated in marketing might more frequently take note of information regarding customer preferences than of information regarding manufacturing processes (Waller, Huber and Glick, 1995).

Having discussed several examples of market-oriented organizational structures, we now turn to the market-oriented design of organizational processes. The literature clearly indicates that increased market complexity together with a heightened need for customer responsiveness requires improved interfunctional integration and coordination (Galbraith and Kazanjian, 1986; Narver and Slater, 1990; Sashittal and Wilemon, 1993). As an example, business organizations can only react to the rapidly changing customer requirements in time if the different functional areas communicate intensively and work closely together. Achieving effective interfunctional coordination requires, among other things, an alignment of the functional area's incentive systems and the creation of interfunctional dependency (Narver and Slater, 1990). Empowering customer contact employees to make their own decisions represents another measure which can be used to enhance the level of market orientation. Empowerment means pushing decision-making power down to lower levels of the company. By empowering customer contact employees the management of a company or a business unit replaces heavily standardized and mechanistic approaches for dealing with customers with looser structures that allow for quick and individualized problem solutions (Zeithaml, Parasuraman and Berry, 1990). Finally, the systematic integration of key customers into the redesign of business processes might also enhance a business organization's market orientation.

Many authors (e.g. Kohli and Jaworski, 1990; Narver and Slater, 1990) claim that the design of the *information system* plays a major role in aligning a business organization to the market. Collecting accurate and actual information on customers and competitors is regarded as an important prerequisite for acting in a market-oriented manner (Sinkula, Baker and Noordewier, 1997). This market information must then be disseminated across all relevant departments in the organization because responding effectively to market needs requires the participation of virtually all organization members (Kohli and Jaworski, 1990). Beyond the generation and dissemination of market intelligence, the storage and retrieval of market information represents a third aspect which has to be considered when implementing market orientation in the information system. First, it has to be made sure that executives as well as employees have access to relevant market information. This implies on the one hand that the existence of databases and expert information systems which contain market information is well communicated within the organization. On the other hand, it is important that limitations concerning the accessibility are restricted to a minimum. Second, the information stored has to be updated regularly in order to provide a reliable basis for any business action taken.

We mentioned above that planning is often regarded as the initiating force in the management process. Within the context of our model, it is therefore crucial that the *planning system* is rigorously designed in a market-oriented way. By setting specific targets like the achievement of a durable competitive advantage or a significant increase in customer satisfaction (Narver and Slater 1990) the management of a company or a business unit is able to direct an organization's orientation towards its markets. Within this context, it is important that these targets are precisely defined and that the responsible persons are named. When monitoring the environment it is important that changes in customer preferences as well as competitors' offers are predicted regularly so that the product range can be adjusted in time. The practice of incorporating customer comments on prototypes into the decision on the market introduction of new products or services represents another feature of a market-oriented planning system (von Hippel, 1988).

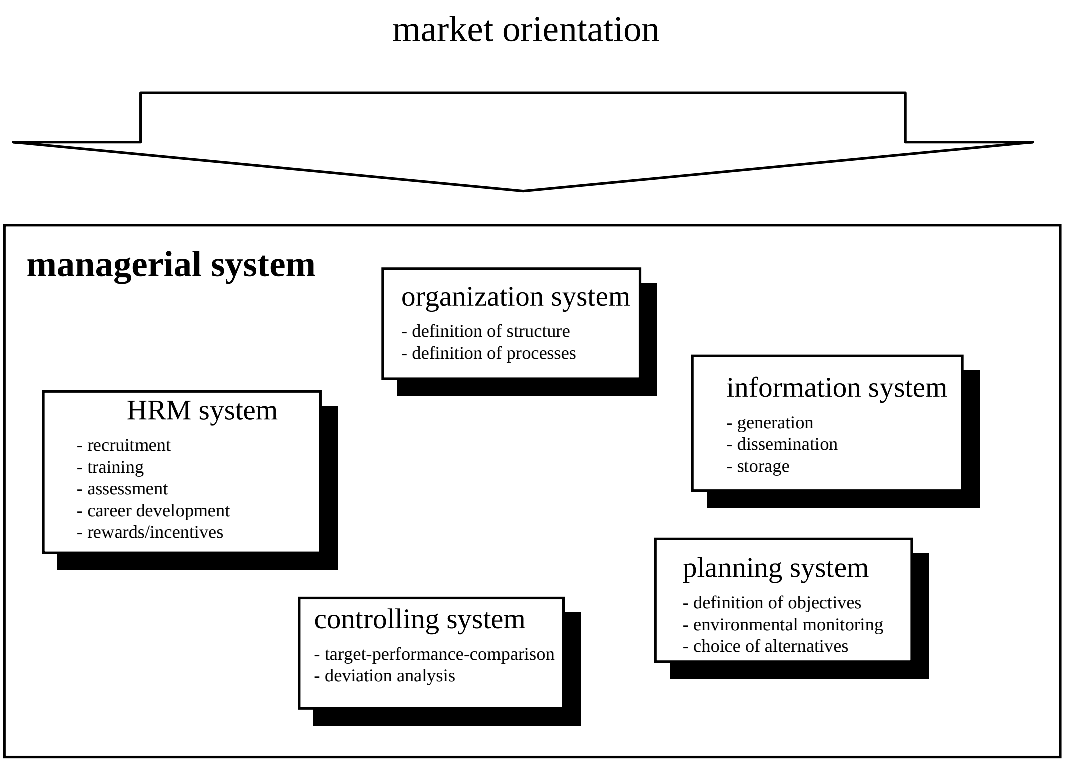
In spite of the above discussed importance of the *controlling system* this management system has been widely neglected within the context of market orientation so far (Jaworski, 1988). An inward-oriented controlling system with a focus on internal figures when comparing targets set in advance with actual performance involves the risk that market-related figures are not tracked adequately. This may first result in an insufficient knowledge about the current market position as well as the current degree of market orientation. Second, it weakens the overall market orientation of a business organization since employees will focus on optimizing those figures which are used to evaluate their performance (Tosi and Hammer, 1982). A market-oriented controlling system therefore helps management to control both internal and market-related figures. Examples of market-related figures that should be included in the comparison of actual performance with targets set are customer satisfaction indices, market shares, and customer retention rates. . When analyzing the reasons for identified deviations it is an indicator of being market-oriented to consider not only possible internal, e.g. company-specific reasons, but also market-related factors that might have influenced certain outcomes.

The human resource management system offers a large scale of opportunities to implement market orientation, ranging from the recruitment process to the incentive structure. However, both academics and practitioners have paid little attention to the role of employee issues in the implementation of market orientation so far (Bowen, 1996; Mohr-Jackson, 1991). Certain types of individuals may be more or less prepared to carry out their job responsibilities in a market-oriented way (Ruekert, 1992). By employing the adequate selection mechanisms (e.g. the simulation of customer interaction during the recruitment process) the management of a company can identify applicants with a high degree of personal customer orientation who will contribute to the organization's overall market orientation (Schuler, 1996). Since competitor orientation represents a core element of the market orientation construct (Narver and Slater, 1990; Greenley, 1995), hiring people with specific knowledge about competitors can also improve a company's degree of market orientation. The use of training and education programs represents another measure that can be used by managers to instil market orientation. The desire to improve customer service often requires increasing employee sensitivity to customer wants which should be accomplished through corresponding employee development programs (Ruekert, 1992). Using market-related performance indicators such as the attained customer satisfaction is also likely to have a significant effect on an individual's market orientation (Tosi and Hammer, 1982). Finally, relating the compensation of service employees directly to customer satisfaction indices or giving rewards to employees who personally contributed to a significant increase in an organization's market orientation are just two examples of how the management can use the reward and incentive system to direct individual behavior toward market orientation (Schuler, 1996).

Figure 2 summarizes our systems-based conceptualization of market-oriented management.

FIGURE 2

Model of Market-oriented Management



HYPOTHESES ON PERFORMANCE OUTCOMES

The relationship between market orientation and business performance has been investigated by a number of researchers over the last decade. Most of them found a significant positive effect of market orientation on business performance (e.g. Narver and Slater, 1990, Diamantopoulos and Hart, 1993, Jaworski and Kohli, 1993). Our analysis of the performance outcomes of market orientation differs from the existing literature in two ways. First, we analyze the relationship between market-oriented *management* and business performance. Second, in studying performance outcomes of market-oriented management we explicitly distinguish between market performance and financial performance. We define market performance as the effectiveness of an organization's marketing activities. Market performance covers among other things the achievement of customer satisfaction and loyalty, the creation of customer value and the attainment of desired market shares. Financial performance on the other hand is defined as the percentage return on sales.

Since a market-oriented design of the management systems enforces customer orientation at the operational level, we hypothesize that market orientation at the management level has a positive impact on market performance. Hence, we predict the following effect:

H1: The degree of market orientation of the management systems positively influences market performance.

Several authors have found positive relationships between certain components of the market performance construct and a business organization's financial performance. The findings of Anderson, Fornell and Lehman (1994) indicate a positive impact of customer satisfaction on profitability. The results of an empirical study by Hallowell (1996) suggest a positive effect of customer satisfaction on customer loyalty which in turn is positively related to profitability. Rust, Zahorik and Keiningham (1995) also found empirical evidence for a positive impact of customer satisfaction on business profitability. Given these findings, we hypothesize a positive effect of market performance on financial performance:

H2: Market performance positively influences financial performance.

Thus, we hypothesize that market-oriented management has an indirect effect on financial performance through the mediating market performance construct. This causal chain conceptualization will provide more detailed insight concerning the performance outcomes of market orientation than previous research.

SCALE DEVELOPMENT

Process

Based on the conceptualization of market-oriented management both of the authors independently generated a set of items. These items were discussed in in-depth-interviews with 16 managers and a number of academics. The interviews had three major objectives. First, we intended to find out whether the conceptualization of the construct seemed reasonable to the respondents and whether additional factors were necessary. Second, we wanted to find out whether the respondents considered the items generated by the authors as being representative of market-oriented management. Third, we wanted to identify additional items representing market-oriented management.

The results of the expert interviews confirmed the multi-dimensional structure proposed earlier in our model of market-oriented management. Drawing on the findings from the literature review, our model, and the field interviews we developed a tentative measurement scale that incorporated the five management subsystems discussed above. All measures were conducted with a 7-point scale ranging from "strongly agree" to "strongly disagree". The measurement of the 15 factors underlying the five subsystems (see Figure 2) was conducted by the use of multi-item scales, resulting in a total of 92 items. This measurement approach has proved to be adequate when measuring complex constructs (Churchill, 1979; Jacoby, 1978). Using a sample of 25 general managers, the tentative scale was pre-tested which led to some minor modifications.

Data collection/Sample

A questionnaire was sent out to the general managers of 1,250 strategic business units (SBU's) across different industries in Germany. We defined a SBU as a relatively autonomous unit with the general manager having control of at least three of the following functions: marketing, sales, manufacturing, R&D, finance and human resources. In order to assure a high generalizability of our findings, we included business units from both the service sector (*banking/insurance*) and the industrial sector (*chemical industry*, *electrical engineering*, *food industry*, *and mechanical machinery*). The names of the SBUs as well as those of the general managers in our sample were obtained from telephone calls to firms listed in industry directories. We chose the general manager because we thought his position would enable him best to answer. Four weeks after the first survey we sent out a second survey to those individuals who had not answered so far. Usable responses were received from 234 managers, resulting in an effective response rate of 18.7 %. Given the length of the survey and the tight time schedule of the managers targeted, this response rate can be considered satisfactory.

We believe we were successful in reaching respondents having an overview of all relevant areas of management. Specifically, more than 75 % of our sample indicated their job titles as being member of the board, general manager or head of division. Further, we also succeeded in generating a well-balanced sample of business units across the different industries.

Results

In order to assess measurement validity, confirmatory factor analyses were run with LISREL 8 (Jöreskog and Sörbom, 1993). Confirmatory factor analysis is considered to be superior to more traditional criteria such as Coefficient Alpha in the context of scale validation since less restrictive assumptions apply (Anderson and Gerbing, 1993; Bagozzi, Yi and Phillips, 1991; Gerbing and Anderson, 1988). Scale purification led to a significant reduction in the number of items, leaving a total of 60 items. A complete list of the remaining items is provided in the Appendix. With respect to the factor structure underlying the items one deviation from the structure shown in Figure 2 was necessary. More specifically, within the organization system we did not find convergent validity between different items related to structural aspects. Therefore two factors were created for this component. They relate to hierarchical aspects and to the design of customer interfaces respectively.

Table 1 shows the confirmatory factor analysis results together with some additional reliability information. Here, analyses were conducted separately for each of the five management systems. Composite reliability represents the shared variance among a set of observed variables measuring an underlying construct (Fornell and Larcker, 1981). Generally, a composite reliability of at least .6 is considered desirable (Bagozzi and Yi, 1988: 82). With the exception of the factor related to market-oriented career development, this requirement is met. As can be seen from Table 1, most of the Coefficient Alpha values clearly exceed the threshold value of .6 recommended by Nunnally (1967) for those studies which are highly exploratory in nature. Thus, on an overall basis the measurement properties of the scale are satisfactory.

After this, we integrated all 16 factors consisting of 60 items into an overall measurement model of market-oriented management. The chi square statistic is significant ($\chi^2(1590) = 1685.79$, $p < .05$), suggesting inadequate model fit. However, the test has been argued to have major limitations (Baumgartner and Homburg, 1996; Bentler, 1990). The ratio of chi square to degrees of freedom therefore has been suggested as an alternative measure of overall fit (Bagozzi and Baumgartner, 1994; Jöreskog and Sörbrom, 1993). Carmines and McIver (1981) pointed out that values of the ratio smaller than two indicate accepable model fit. The corresponding ratio in our model is 1.06, indicating acceptable model fit. GFI and AGFI are two other descriptive overall fit measures for which a threshold value of .9 usually is recommended (Baumgartner and Homburg, 1996; Bagozzi and Yi, 1988). The same threshold value can be applied to CFI which is an incremental fit index suggested by Bentler (1990). Finally, RMSEA is a fit measure that is based on the concept of non-centrality (Steiger, 1990). Values up to .08 usually are considered to indicate satisfactory model fit. Since all those criteria are met (GFI = .96, AGFI = .96, CFI = 1.00, RMSEA = .02), the measurement model seems to fit the underlying data well.

In order to further validate our scale we included four items into our survey which were directly related to the perceived level of market-oriented management within the business unit (e.g. "This business unit is managed in a market-oriented way."). We computed the correlation between the average of the 16 factors in our scale and these four items. The value of .79 indicates a high level of validity of our scale.

TABLE 1

Measurement Results

	number of items	mean/sd	composite reliability	coefficient alpha
market-oriented organization system				
hierarchy	*2*	*5.90 / 1.29*	*.82*	*.66*
interfaces	*3*	*5.49 / 1.27*	*.61*	*.52*
processes	*7*	*4.40 / 1.06*	*.77*	*.73*
market-oriented information system				
generation	*7*	*4.91 / 1.15*	*.86*	*.82*
dissemination	*4*	*4.95 / 1.29*	*.85*	*.81*
storage	*4*	*3.82 / 1.45*	*.81*	*.78*
market-oriented planning system				
goal definition	*5*	*5.68 / 1.01*	*.84*	*.81*
environmental monitoring	*5*	*4.88 / 1.17*	*.84*	*.82*
selection of alternatives	*3*	*5.43 / 1.04*	*.66*	*.57*
market-oriented controlling system				
analysis of goal attainment	*3*	*4.07 / 1.46*	*.80*	*.76*
analysis of deviation	*4*	*4.40 / 1.19*	*.84*	*.82*
market-oriented human resource management system				
recruitment	*2*	*4.25 / 1.55*	*.74*	*.66*
training	*3*	*4.45 / 1.53*	*.86*	*.85*
assessment	*3*	*3.47 / 1.59*	*.88*	*.86*

career development	*2*	*4.90 / 1.20*	*.50*	*.38*
rewards/incentives	*3*	*3.13 / 1.40*	*.65*	*.61*

The overall measurement model of market-oriented management discussed above has two major benefits. First, the underlying factor structure is clear and easy to interpret. Second, there is no major loss of information due to reduction of complexity. On the other hand, modeling 60 items with 16 factors yields a rather complex model structure. We therefore tested various alternative measurement models with less complex underlying structures. More specifically, we considered five alternative models with a reduced number of factors. Three of these were generated in a step-wise process. The first alternative model consisted of 14 factors, with only one factor representing the market-oriented information system. The second alternative model was obtained by additionally reducing the three factors representing the market-oriented planning system in the initial model to just one factor. Combining the three dimensions of the organization system resulted in a third alternative model with only 10 underlying factors. The fourth alternative measurement model consisted of five factors, each of them representing one management system. Finally, a one-factor model capturing all 60 factors within one dimension was tested. As can be seen from Table 2, all five alternative models indicate a satisfactory global fit. However, the overall fit statistics of all alternative models are for the most part inferior to those of the measurement model described above. Additionally, the 16-factor model exhibits the lowest AIC measure (Akaike, 1974). The AIC measure is a well-accepted criterion for the selection of one of several alternative models which penalizes over-parameterization. The statistical results together with the above mentioned advantages led us to the conclusion that the initial 16-factor model represented the best operationalization of market-oriented management.

TABLE 2

Alternative Overall Measurement Models

model	χ^2	df	χ^2 / df	GFI	AGFI	RMSEA	AIC
16-factor-model	*1,685.79*	*1,590*	*1.06*	*0.96*	*0.96*	*0.02*	*2,165.79*
14-factor-model	*1,834.21*	*1,619*	*1.13*	*0.96*	*0.96*	*0.03*	*2,256.21*
12-factor-model	*1,896.58*	*1,644*	*1.15*	*0.96*	*0.95*	*0.03*	*2,268.58*
10-factor-model	*2,063.40*	*1,665*	*1.24*	*0.96*	*0.95*	*0.03*	*2,393.40*
5-factor-model	*2,406.45*	*1,700*	*1.42*	*0.95*	*0.94*	*0.04*	*2,666.45*
1-factor-model	*2,883.44*	*1,710*	*1.69*	*0.94*	*0.93*	*0.06*	*3,123.44*

RESULTS ON PERFORMANCE OUTCOMES

Having completed the development of our measurement scale, we tested the hypotheses related to the performance outcomes of market-oriented management. More specifically, we analyzed a causal model with three constructs. The first one is the construct of market-oriented management which was measured with a single indicator computed as the mean value of the 60 items in our scale. We used this more parsimonious conceptualization of market-oriented management to obtain a causal model with a lower degree of complexity in terms of the number of parameters to be estimated (Bentler and Chou, 1987). Also, a one-dimensional conceptualization of market-oriented management has been shown to provide an adequate fit with our data (see Table 2).

The second construct covers the business unit's market performance. It was measured by six items which were related to different aspects of market success such as the achievement of customer satisfaction, the creation of customer value, and the attraction of new customers. To provide an appropriate frame of reference, we asked the respondents to rate the corresponding performance of their business unit in relation to that of its competitors. The corresponding composite reliability of .92 clearly exceeded the threshold value of .6 (Bagozzi and Yi, 1988: 82).

The third construct in our causal model relates to the business unit's financial performance. It was measured using two distinct approaches reflected in the literature - objective as well as judgmental measures. The objective measure was the business unit's return on sales (ROS). The judgmental measure asked informants for their assessment of the financial performance of the business relative to the industry's average, rated on a 7-point scale ranging from "poor" to "excellent". In this case, composite reliability was .68.

On an overall basis, the model was found to fit the data reasonably well. Although the significant chi square statistic (χ^2 (26) = 61.84, $p < .01$) indicates discrepancies between the data and the proposed overall model in Figure 3, other indicators suggests an adequate fit of the model: (1) GFI was .99, AGFI was .98, and CFI was .99, (2) RMSEA was .08, and (3) the Q-plot was approximately linear with a slope near 1 suggesting the absence of major model misspecifications (Bagozzi and Yi, 1988; Bentler, 1990; Jöreskog and Sörbom, 1993; Steiger, 1990).

Market-oriented management was found to have a significant positive effect on market performance (γ = .58, $p < .01$), (H1). Market performance in turn had a significant positive effect on financial performance ($\beta = .56$, $p < .01$), (H2). Thus, the empirical results provide support for both hypotheses. They reveal that market-oriented management has a positive indirect effect on financial performance through the mediating construct of market performance.

An additional interesting question is whether there is also a direct effect. We tested this by introducing into our causal model a direct path leading from market-oriented management to financial performance. Based on a chi square difference-test (Jöreskog and Sörbom, 1993), it was found however that this additional link did not significantly improve the model's fit to the data. Therefore we conclude that there is no significant direct relationship between market-oriented management and financial performance. Rather, the causal chain structure captures the essence of performance implications of market-oriented management.

DISCUSSION

During the last decade, the concept of market orientation has received increased attention from both the management and the marketing literature. While management research has focused on selected aspects related to market orientation such as the implications for human resource management (e.g, Mohr-Jackson, 1991) the marketing literature has taken either a behavioral or a cultural perspective on the construct. However, previous resarch has not integratively addressed the issue of market-oriented management.

Given the important role of management systems for guiding action within business organizations, our research developed and empirically validated a scale measuring the degree of market orientation of the different management systems. These management systems include the organization system, the information system, the planning system, the controlling system, and the human resource management system.

The comprehensive measurement scale developed in our study provides a valid basis for future studies dealing with market-oriented management. More specifically, it may be used in studies that focus on the antecedents and consequences of market-oriented management rather than the measurement of the construct.

Additionally, we gained more detailed insight on the performance implications of market orientation. According to our empirical results, market-oriented management does have a significant effect on business performance. However, there is no direct effect on financial performance but an indirect one via market performance.

More generally, our research has contributed to bridging the gap between the management literature and the literature in the marketing discipline. It is evident from our literature review that the issue of market orientation has been tackled from different perspectives and with different approaches within the two academic disciplines. Integrating literature from both domains certainly contributes to a more intensified dialogue between researchers in different disciplines.

Our research also suggests fruitful avenues for future studies. First, it is interesting to look at moderating effects on the link between market-oriented management and performance. While our study has shown the presence of this link, the relationship may be stronger in some context than in others. As an example, it might be hypothesized that market-oriented management is especially valuable under conditions of high market dynamism.

Also, future research might expand our framework into a dynamic setting. The issue of time lags in the different performance outcomes certainly is an interesting field for future work in this area.

Our study has also several managerial implications. The first important managerial implication of our study relates to the strong performance outcomes of market-oriented management. On the basis of our empirical results, we can encourage managers to design the different management systems in a market-oriented way.

Within this context, it is also important for managers to understand the nature of the relationship between market-oriented management and financial performance. Our research shows that this effect is essentially indirect through market performance. It is reasonable to assume that there is some time lag in these effects, although our study cannot demonstrate this because of its static nature. Against this background, it is important that managers do not only concentrate on financial figures, but also measure market-related performance outcomes such as customer satisfaction and customer loyalty.

Third, managers can use the measurement scale developed in the study for various purposes. First of all, the scale helps senior executives to assess the actual degree of market orientation of their management systems. As intervention programs aimed at increasing the degree of market orientation are implemented, the measurement scale can be used to quantitatively chart the progress of such programs. Further, managers may use the scale to compare different SBUs within one organization with regard to the degree of market orientation of the management systems. Finally, our research clearly delineates factors that enhance market orientation at the management level.

APPENDIX

Scale Items

Market-oriented Organization System

Hierarchy

In this business unit the head of the marketing department has a very high hierarchical position.

In this business unit the head of the sales department has a very high hierarchical position.

Interfaces

In this business unit we have installed key account managers.

Each customer is assigned to a particular customer contact employee in this business unit.

In this business unit the responsibility for the handling of customer complaints is clearly defined.

Processes

In this business unit customers can talk to all employees that are involved in the production and delivery of our products and services.

We regularly benchmark the structure and quality of our processes.

In order to make our processes more market-oriented, we have regular meetings of all employees with direct contact to our customers.

In this business unit customer contact employees are empowered to decide on their own.

In this business unit each employee is regarded as an internal customer.

We regularly meet with customers to make our internal processes more market-oriented.

We immediately adopt our internal processes to changing market requirements.

Market-oriented Information System

Information Generation

In this business unit each customer complaint is analyzed in depth.

We regularly collect background information on our customers (activities, buying behavior, etc.).

We regularly and systematically monitor our competitors' activities.

We systematically ask our customer contact employees about their experiences.

The responsibility for the collection and analysis of suggestions made by employees to increase the degree of customer orientation is clearly defined in this business unit.

In this business unit new products launched by our comptetitors are analyzed in depth.

We do a lot of market research in this business unit.

Information Dissemination

We regularly organize interdepartmental meetings in which customer contact employees report on their experience with customer interactions.

New market information is communicated immediately across all concerned business functions.

In our business unit we have an message system which can be used to send important market information to all employees.

In this business unit new information about customers and competitors is transferred very slowly to other departments. *(R)*

Information Storage

We have installed electronic databases which contain extensive information on customers.

We have installed electronic databases which contain extensive information on competitors.

In our business unit all employees have unlimited access to the full range of market information stored in our databases.

We regularly inform our employees about our internal sources of market-related information.

Market-oriented Planning System

Definition of Objectives

We use feedback from our customers as a guideline for the definition of our business objectives.

Reaching a high degree of customer satisfaction is an important objective in our business unit.

Delighting our customers is an important objective in our business unit.

The generation of competitive advantages is an important objective in our business unit.

In this business unit marketing and sales employees take part in the process of goal definition.

Environmental Monitoring

We analyze market trends on a regular basis in order to identify opportunities and risks.

We regularly predict changes in customer preferences in order to modify the range of our products in time.

We regularly meet with our most important customers to discuss their future needs.

Changes in basic market conditions and their effects on our product offerings are taken into account during our planning activities.

We make sure that information resulting from our monitoring activities is taken into account during our planning activities.

Choice of Alternatives

In this business unit customer contact employees take part in decisions on the future product range.

In this business unit decisions on the introduction of new products depend to a large degree on the market potential of the product.

In this business unit decisions on the introduction of new products are influenced by the judgment of selected customers that have been asked about the new product in advance.

Market-oriented Controlling System

Target-Performance-Comparison

We regularly compare actual customer satisfaction assessments with our customer satisfaction objectives.

In this business unit indicators of product quality are based on customer requirements.

In this business unit indicators of process quality are based on customer requirements.

Deviation Analysis

In this business unit analyses of deviation are based upon extensive information on customers.

In this business unit analyses of deviation are based upon extensive information on competitors.

In this business unit analyses of deviation are based upon extensive information on basic market conditions.

In this business unit corrective action is taken immedately after the analysis of deviation has been terminated.

Market-oriented Human Resource Management System

Recruitment

We systematically test the skills of job applicants in dealing with customers.

During the recruitment process we simulate customer contacts in order to check the applicants' personal customer orientation.

Training

In this business unit new employees get detailed information on the most important customers before they start working.

In this business unit new employees get detailed information on the most important competitors before they start working.

We regularly inform our employees about significant changes in the basic market conditions.

Assessment

In this business unit the assessment of managerial performance is influenced by the results of customer satisfaction surveys.

Actitivities which are directed towards an increase of the customer satisfaction level play a major role in the assessment of senior managers' performance.

In this business unit the assessment of managerial performance is influenced by the degree to which customer satisfaction objectives are met.

Career Development

In this business unit very customer-oriented employees usually get promoted faster than others.

In this business unit general managers usually have worked in the marketing/sales department before.

Rewards/Incentives

Customer satisfaction assessments influence senior managers' pay in this business unit.

We regularly award prizes to employees who contributed personally to an increase of our business unit's customer orientation.

Suggestions by employees that lead to a significant increase in overall customer satisfaction are separately rewarded in this business unit.

(R) indicates a reversed item.

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