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Benders, J.G.J.M.; Schouteten, R.; Aoulad El Kadi, M.

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# ERP-systems and job content: a case study of HR-assistants

A case study  
of HR-assistants

Jos Benders

*Department of Organisation Studies, Tilburg University,  
Tilburg, The Netherlands and*

*Radboud University Nijmegen, Nijmegen, The Netherlands*

Roel Schouteten

*Radboud University Nijmegen, Nijmegen, The Netherlands, and*

Mohamed Aoulad el Kadi

*Nuon HR Services, Duiven, The Netherlands*

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## Abstract

**Purpose** – The purpose of this paper is to gain insights into the effects of an enterprise resource planning (ERP)-implementation on job content.

**Design/methodology/approach** – Data are collected using a qualitative expert instrument (WEBA) and a questionnaire (NOVA-WEBA) among HR-assistants in a case study in the Dutch hospitality industry.

**Findings** – Contrary to what one might expect, the introduction of an ERP-system does not automatically result in a more centralized organization: in granting local authorizations user/employee job decision latitude is affected c.q. realized. However, even when a decentralization policy is pursued as is the case in our study, job decision latitude is not necessarily enhanced. This is partly caused by ERP-related changes such as increasing standardization of operational procedures and data entry requirements, and partly by organization-specific developments in how tasks get assigned to jobs.

**Research limitations/implications** – The configuration of ERP-systems varies by organization, and is largely a matter of organizational choice. The case is unique, as is indeed any case.

**Practical implications** – Insights into ERP's effects can help organizations achieve better designed jobs. Pre-implementation simulations of effects can help steering towards desired outcomes.

**Originality/value** – The paper provides useful insights into the effects of an ERP-implementation on job content through a case study of HR-assistants.

**Keywords** Resource management, Systems analysis, Service industries, The Netherlands, Job descriptions

**Paper type** Research paper

## Introduction

Enterprise resource planning (ERP)-systems are organization-wide information systems designed to integrate information flows within the user organization in order to control business process in an integrated fashion, thus enhancing efficiency and effectiveness and/or reduce transaction costs (Davenport, 1998; Moon, 2007).

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Recent literature reviews on ERPs (Dery *et al.*, 2006a; Moon, 2007) conclude that the focus in ERP literature is on implementation issues and that little attention is paid to the impact on the nature of work and organization. Studies from the employee perspective tend to be output focused, for instance on technology acceptance, training and critical success factors. User satisfaction is an important aspect, yet leaving from the Technology Acceptance Model (Davis, 1989) mainly focuses on perceived usefulness and ease of use (Konradt *et al.*, 2006; Sabherwal *et al.*, 2006) rather than on job content and its quality. A similar conclusion is drawn by Venkatesh *et al.* (2007) who conclude that, although technology adoption research has progressed impressively, the investigation of outcomes (e.g. job satisfaction) in technology adoption research is very limited.

The attention for organizational and employee consequences is slowly emerging, however (see special issues of *Strategic Change*, Dery *et al.*, 2005, No. 5; and *New Technology, Work and Employment*, Benders *et al.*, 2006, No. 3; and Koch and Buhl, 2001; Hall, 2002; Elmes *et al.*, 2005; McAdam and Galloway, 2005). These studies indicate that ERPs affect the way that organizations are structured, job content, the distribution of control and authority, and the types of skills needed (Hall, 2002, Hall, 2005). However, the resulting changes in job content generally appear to be more or less an epiphenomenon, i.e. ERP-implementations follow a technical logic that does not take job-related changes into considerations. Configuring ERP-systems inevitably affects jobs, yet the effect on jobs seems hardly ever an explicit consideration in the configuration process. Given that employees' behaviors are crucial in how ERP systems get used and thus for performance, and that job content is known to affect behavior (Judge *et al.*, 2001; Wright *et al.*, 2005), the absence of explicit attention is undesirable from a business perspective.

As Boersma and Kingma (2005, p. 198) state, "Problems with ERP are, at least in part, attributed to an underestimation of the social and cultural side." By focusing on one particular social aspect, namely job content, we hope to contribute to remedies for solving one source of ERP-related problems. Thus, we research how job content changed after an ERP-implementation that explicitly aimed to decentralize decision-making and enhance local employee autonomy. This case appears exceptional given the picture we just drew that considerations about job content tend to be left out of ERP-implementations. For exactly this reason it is a good case: it illustrates the potential for creating "good jobs" and some constraints for doing so.

We start by elaborating on this paper's key notions: job content and how it may be affected by ERP-systems. Thereby we focus on "job decision latitude." Subsequently, we introduce our case study and our measurement instrument to assess job content. After presenting the result, we close the paper by conclusions and a discussion.

### **Job content and ERP-systems**

The discussion on how ERP-systems impact job content mainly considers employee autonomy, often dubbed "empowerment" (Psoinos and Smithson, 2002) or more precisely "job decision latitude" (Karasek, 1979), and control. Employee autonomy is directly influenced by the configuration process. Employees may or may not be authorized to access, insert and/or modify data in the system. Based on their authorizations and access, they are enabled to take decisions. Thus, in the configuration process ERP-implementers directly affect individual employees' job

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decision latitude. It may be decided to tighten control over employees, for instance to monitor their job performance. However, changes in control over employees may come about more indirectly. ERP-systems are meant to enhance control over operational processes, and thus the resources used in these processes. As employees are considered as resources as well, enhanced control over employees is likely to result. For instance, ERP-systems contain standard descriptions of operational processes; when these are implemented, part of their tasks are governed by ERP-embedded procedures. The separation of execution and control as taught in administrative organization and “best practices” are two examples how ERP-embedded organizational notions affect job content. Such notions seem to play an intransparent yet important role in configuration processes. Clausen and Koch (1999, p. 477) coined the term “power by default” in this respect: by default, the procedures contained in an ERP-system are leading, and deviation from this only occur if powerful parties and/or arguments succeed in realizing an alternative. Configuration procedures steer towards conformity to ERP-embedded procedures, a tendency which is reinforced by ERP-implementers (Dery *et al.*, 2005; cf. Batenburg *et al.*, 2008).

A limited number of studies were published to shed some light in what changes resulted in particular ERP-implementations. Sia *et al.* (2002) showed that tightened management control through panoptic visibility of organizational activities may go hand in hand with increased empowerment of employees through increased access to different modules of the system. Soh and Sia (2004) see the ability to track products as a form of empowerment: what they call ERP’s “process orientation” allows employees to track the progress of individual products. Compared to a situation where this is not the case and hence employees are confronted with orders, insight into these orders’ process statuses may be seen as progress for employees. However, as a comment on this study: as long as they are not authorized to take action, this may have the effect of increasing stress levels, because of lack of control capacity: seeing problems happen without being able to solve them, as insight alone is not sufficient.

Elmes *et al.* (2005) also stress that enhanced personal control may go hand in hand with being controlled. As colleagues are enabled to watch each other’s work more closely, enlarged peer pressure is a likely result: employees who know they are being watched will have higher self-discipline.

Another example of ambivalent and unintended effects of ERP implementation is presented by Koch and Buhl (2001). They present an example of self-managing teams and ERP-systems: the former are an exponent of an organizational decentralization policy, whilst the latter entail centralization of information and therefore often decision-making powers. In all but one of the organizations investigated, the resulting compatibility problem was not realized upfront but only surfaced in the process of implementation.

Whilst insightful for discussing mechanisms that enhance or constrain employee autonomy, as well as control over employees, in none of these studies a validated research instrument was used to study the key notion of “employee autonomy” or “empowerment.” This is potentially problematic as the term “empowerment” lends itself for various interpretations (Psoinos and Smithson, 2002). The same holds for employee autonomy, although this older concept has been defined more precisely and validated instruments to assess it are available. The next section goes further into this, and discusses our choice for a definition and matching research instrument.

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## Case

A Dutch organization in the hospitality industry (entertainment and games) introduced PeopleSoft's HR module to centralize, support and align its HR information across the organization's 13 different establishments. This HR decision support module connects different databases that entail HR data on some 5,000 employees. Its introduction affects the work and job content of the organization's 32 HR assistants, the end-users. As will be described in more detail in the results section, many of the HR-assistants' former tasks were automated. On the other hand, following the organization's strategy of decentralization and delegation of responsibilities, some of the (administrative) tasks that were executed at a central level (HQ) before were delegated to the HR departments in the different establishments. These departments were free in deciding how to distribute the decentralized tasks over the jobs of HR assistants and other HR staff.

The introduction of PeopleSoft's HR module and simultaneously decentralizing some of the tasks from the central office to the establishments affect the administrative tasks of the establishments' HR assistants. The introduction of the HR-module and the decentralization of tasks and responsibilities cannot be viewed separately since these developments are intertwined. Both developments affect job content at the same time and the decentralization strategy is intentionally meant as a counterbalance to the possible negative effects of the implementation of the HR-module.

## Method

As argued above, job content is studied as the balance between job demands and decision latitude. Important job characteristics in achieving this balance are the "wholeness" of the work process, responsible autonomy, and worker's multiplicity of skills (Trist and Bamforth, 1951). This means that jobs consisting of complete tasks and sufficient control capacity to conclusively deal with control need are considered as "good jobs."

We applied data triangulation (Yin, 1994) in using quantitative and qualitative methods. A survey was conducted to measure the job design dimensions, and qualitative data (from a qualitative expert instrument as well as interviews) were used to interpret the quantitative findings and thus to compensate for the limitations of our cross-sectional approach.

Firstly, we qualitatively analyzed job content before and after the introduction of the HR module and the decentralization of tasks and responsibilities. Based on Karasek's model, we assessed job content by measuring the balance between job demands (control need) and job decision latitude (control capacity), using an expert instrument called WEBA (well-being at work, see, e.g. Schouteten and Benders, 2004). Using observer ratings, WEBA establishes insight at job level into the job composition (completeness, difficulty), problems that occur in the work (job demands), and the possibilities to deal with these problems (job decision latitude: autonomy, interaction potential). To attain a nuanced qualification of "good jobs," WEBA distinguishes seven characteristics. A good job should (Schouteten and Benders, 2004, pp. 357-358):

- (1) contain preparing and supporting tasks, besides the primary executing tasks (completeness of the work);
- (2) contain a variety of difficult and easy tasks (based on the variety and level of mental processing; difficulty of the work);

- (3) consist of non-monotonous tasks (Monotony of the work);
- (4) offer the worker the ability to decide upon work pace, order and method (workplace autonomy);
- (5) offer possibilities to ask direct colleagues for help with problems (interaction potential);
- (6) offer possibilities to ask superiors or other departments for help with problems (organizing tasks); and
- (7) provide sufficient, reliable, and timely information with respect to the work to be done (information provision).

These characteristics are qualitatively valued on a three point scale: insufficient, marginally sufficient, and sufficient. The resulting overall picture indicates the level of the balance between job demands and decision latitude.

Secondly, we used a questionnaire to measure the employees' opinions about the job composition, job demands and job decision latitude. The questionnaire was composed of scales from two existing and frequently used Dutch questionnaires to measure employee well-being and job satisfaction: NOVA-WEBA (Dhondt and Houtman, 1996) and VBBA (Van Veldhoven, 1996). Based on extensive analyses the scales in these questionnaires are proven to be reliable and valid. We chose scales from these questionnaires measuring the main concepts in this study: job composition, job demands, job decision latitude, and job changes (see Table I for an overview). As a result, our questionnaire contained the following scales: work load, workplace autonomy, interaction potential, presence of organizing tasks, work organization, information provision, completeness of the work, and alternation in the work. The NOVA-WEBA scales fit well with the WEBA, as both instruments were developed on the same theoretical background. However, unlike the other scales, NOVA-WEBA's monotony scale turned out to be unreliable

Scale	Origin	Measure	Example question
Work load	NOVA-WEBA	Job demands	Do you have enough time to finish your tasks on time?
Workplace autonomy	NOVA-WEBA	Decision latitude	Can you decide on your own discretion how to conduct the tasks?
Interaction potential	NOVA-WEBA	Decision latitude	If necessary, do colleagues help you to finish a task?
Presence of organizing tasks	NOVA-WEBA	Decision latitude	Do you discuss with others how to divide the work?
Work organization	VBBA	Job demands	Is the execution of your job hindered by other people's absenteeism?
Information provision	NOVA-WEBA	Decision latitude	Do you get sufficient information for completing your job?
Completeness of the work	NOVA-WEBA	Job composition	Do you keep record of the materials you need?
Alternation in the work	VBBA	Job changes	How often do important changes in your tasks occur?

**Table I.**  
Scales in the questionnaire, their origins, what they measure and example questions

(Schouteten, 2001, p. 70), so this variable cannot be measured. Consequently, it is left out of consideration.

Per item we asked two questions:

- (1) whether the situation is applicable to the current job; and
- (2) whether this current situation differs from the situation prior to the introduction of PeopleSoft's HR module.

These job content scales were completed with some questions about the employees' perceptions about the work processes that result from the introduction of the HR module and the decentralization of administrative tasks.

We sent the questionnaire to all 32 HR assistants in the 13 establishments, of which 16 returned the questionnaire (50 percent response rate). These 16 represent all establishments, but their number is too small to conduct advanced statistical analyses. We also conducted six interviews with HR assistants for more profound information, interpretations and details on the results of the questionnaire and the qualitative observations (WEBA) regarding the job changes, and about the HR assistants' opinions about job content. We selected the interviewees based on their location and the character of changes that took place. We interviewed three HR assistants from different establishments where, due to the organizational changes, the jobs were extended with extra tasks. And we interviewed three HR assistants from establishments where, due to the changes, old tasks were replaced by new ones.

## Results

### *Job content*

The goal of the HR assistant's job is to perform administrative supporting tasks. Prior to the introduction of the HR module and decentralization of tasks and responsibilities, most of the HR assistants' tasks at the establishments were prescribed by the central HR department. The HR assistants at the establishments were responsible for collecting, selecting and editing the necessary data for the central HR assistants. For this they had to fill out standardized forms and send these to the central HR department for further processing.

Next to these tasks, the HR assistants were also responsible for:

- routine queries, e.g. regarding development agreements or employer's certificates;
- filing personnel records;
- administering the personnel information system; and
- supporting the establishment's HR manager (managing appointments, signaling problems, answering, and/or putting true phone calls).

Since the changes, the HR-assistants' administrative tasks focus on three main processes: employment administration, personnel mutation administration (including registration of absenteeism), and resignation administration. This is a change in the job content in two ways. First, due to the introduction of the HR module, the character of the main administrative tasks changed towards more standardization. Some of the former administrative tasks are even more standardized than before: the main administrative tasks and its many subtasks are very well prescribed. Every process is



divided into strict sequences of tasks that require particular and well-defined pieces of information to enter into the system. Whereas the old forms left room for additional comments, entering data into the system is bound to strict procedures.

Secondly, the decentralization resulted in an extension of the HR assistants' administrative tasks and responsibilities. Formerly, most of the actual administration tasks were performed at central level for which the HR assistants had to collect the data. Now the HR assistants' administrative tasks include the responsibility for personnel mutations in the HR information system (decentralized data entry). This is an extension of tasks in all three main administrative processes. Before the changes the mutations in the HR system were performed at central level. One of the results of this decentralization was that mutation processing times reduced drastically (improvement of the quality of internal services). Another result is that the HR assistants need more knowledge about HR (processes) in general and the HR module in particular.

In conclusion, the number of tasks to be performed at establishment level and their character changed as a result of the decentralization and standardization processes that took place.

In redesigning the jobs of the HR assistants the establishments had some freedom in deciding who was to perform what tasks. As a result, two different ways emerged within the organization. First, in some establishments, generally the larger ones, the extra administrative tasks were added to the existing tasks. And second, particularly in the smaller establishments, the extra tasks replaced some of the former advisory tasks towards personnel. These tasks were taken over by HR advisors. The reason is that in the smaller establishments the HR assistants are now fully occupied when focusing on the administrative tasks. As a result, they have no time left for the other tasks that previously were their responsibility.

As a result of the differences in job content due to the establishments' freedom in organizing the work, the job content changes differ for the HR assistants who got additional tasks and those who got replaced tasks. Based on the WEBA analyses, Table II provides an overview of the main results regarding the job dimensions prior to and after the changes. The next sections elaborate further on these results per dimension.

*Job composition: completeness, difficulty*

Before the changes, the job of the HR assistants was fairly complete. It consisted of a coherent set of executing tasks (mainly administration of information for central

Job content dimension	Before the changes	After the changes	
		Additional tasks	Replaced tasks
<i>Job composition</i>			
Completeness	Fairly complete	+/-	-
Difficulty	Hardly challenging	+	+/-
Job demands	Mostly external coordination problems	-	+/-
Job decision latitude	Sufficient to deal with problems (passive job)	+	+/-

**Notes:** + improvement; - deterioration; +/- no change

**Table II.**  
Changes in job content due to the introduction of PeopleSoft's HR module and the two forms of decentralization



HR and advising local employees), preparing tasks (collecting and selecting of information), and supporting tasks (editing of information). However, the work was hardly challenging, because it consisted mostly of simple and well-described routine tasks. If employees had questions regarding HR, the assistants had to put them through to a central HR officer.

After the changes, we see two main tendencies within the organization, due to the establishments' freedom in organizing the new tasks at establishment level. Where the decentralized administrative tasks are added to the HR assistants' job content, we see that the job is still complete, but also more challenging. Many of the routine tasks are still present, and due to the HR module they are even more routinized and standardized. But these tasks are no longer the main activities of the HR assistant's job (these take up about 30 per cent of the HR assistants time). Instead, the job contains of more tasks and the HR assistants have more responsibilities regarding quality control of the data in the system. Next to this, they are responsible for informing and advising the employees regarding more difficult queries than before. This requires more knowledge about HR instruments and about the HR module.

On the other hand, where decentralized administrative tasks replace some of the advisory tasks, we see that the job consists of a coherent set of tasks aimed at the administrative processes around the HR information system. As a result, it is a complete job, but a less broad one than the jobs where the HR assistants are also responsible for advisory tasks. In comparison, the new job is not as challenging as the previous job, as the advisory work is no longer a constituent part.

#### *Job demands*

Before the changes, most administrative tasks were thoroughly described and followed strict procedures. As a result, job demands, problems that need to be solved for proper execution of the work, were limited. Problems that hindered the work arose from coordination problems with the central HR department or from difficult queries from employees. Coordination problems related to timely delivery or bad quality of information and services from the central department. For instance, difficult queries or problems had to be put through to the central HR department. However, deriving information from the HR system (at central level) often took a rather long time, and as a result, the HR assistants often had to wait a long time for adequate and sufficient information to advise employees.

After the change, the problem of long waiting times for information from the HR system through the central department diminished, because the HR assistants can retrieve the information from the system themselves. Still existing job demands result from the standardized procedures concerning the administration of information in the HR module. The system requires strict data entry and tight deadlines. Next to this, the work of the HR assistants is directly hindered by malfunctions of the system. One of the major problems is that the system closes down for a week each month to process the mutations. As a result, all mutations must be entered before the system closes. For the jobs where the centralized tasks were added to the former job content, the job intensity increased as well, due to the increase in number of tasks (in the same amount of hours) and the difficulty of the tasks. Higher levels of work load make the job more vulnerable for disturbances.

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*Job decision latitude*

Before the changes, the HR assistants had sufficient opportunities to organize the work at their own discretion (autonomy). They also had sufficient interaction potential and organizing tasks in calling in help from colleagues or the central office, to deal with problems (such as difficult queries). They also had sufficient organizing tasks in the form of consultation meetings with colleagues and superiors. As a result, the balance between job demands and job decision latitude was rather well, although at a low level. In Karasek's model this can be classified as a "passive job."

After the changes, autonomy in deciding when and how to execute the tasks decreased, because of the strict procedures and tight deadlines for entering the mutations into the system. This is true for all jobs. However, where the decentralized tasks are added, the assistants have more opportunities to vary their work and take decisions at their own discretion. And in case of system malfunctioning, the larger variety of tasks offers opportunities to continue working while the problems are solved by others. Possibilities to call in help from colleagues (interaction potential) or the central HR department (organizing tasks) did not change and are still sufficient to deal with most of the problems the assistants are confronted with, such as difficult queries. As a result, in the new job also a balance exists between job demands and job decision latitude, but at a higher level, because of the larger variety of tasks and problems or challenges. Since job decision latitude is sufficient to deal with these problems, the new job shows more characteristics of an "active job" in Karasek's model (1979).

Where the decentralized tasks replaced the advisory tasks, the assistants have more opportunities to take decisions at their own discretion (regarding the administrative processes). But due to the dependency on the system, work variety is limited and the work is very well prescribed. Moreover, malfunctions of the system cannot be dealt with by doing other tasks while the system is being repaired by others. In case of system malfunctioning, the HR assistants have to wait. On the other hand, interaction potential and organizing tasks did not change and are still sufficient to deal with most of the problems the assistants are confronted with, except system malfunctions. As a result, in the new job also a balance between job demands and job decision latitude exists, but at more or less the same level as before. It can thus be characterized as a "passive job" in Karasek's (1979) terminology.

*HR assistants' opinions*

The results on the questionnaire show that the HR assistants' opinions coincide with the observations so far jobs (see Table III).

Table III shows that overall the employees perceive their work quite positively and they hardly think that the different aspects changed as a result of the organizational changes. But there are some striking differences between the opinions of HR assistants with additional tasks and those with replaced tasks. The assistants with additional tasks perceive more variety but also a higher work load than those with replaced tasks. The assistants with replaced tasks perceive less variation, and work load remained more or less the same. This means that the employees' opinions coincide with the observers' conclusions about the improvement for HR assistants.

Work scale	Present score <sup>a</sup>		Perception of the change <sup>b</sup>	
	Added tasks	Replaced tasks	Added tasks	Replaced tasks
Completeness of the work	0.11	0.23	1.94	1.74
Alternation in the work	<i>0.10<sup>c</sup></i>	<i>0.55</i>	<i>2.45</i>	<i>1.60</i>
Workplace autonomy	0.28	0.10	1.88	1.85
Interaction potential	0.08	0.05	<i>2.18</i>	<i>1.95</i>
Presence of organizing tasks	0.27	0.47	1.67	1.97
Work organization	0.48	0.36	1.68	1.84
Information provision	0.49	0.29	1.71	1.97
Work load	<i>0.49</i>	<i>0.18</i>	<i>1.67</i>	<i>2.04</i>

**Notes:** <sup>a</sup>The present score indicates the employees' perceptions of the current situation (after the changes). This score can vary between 0 and 1. A low score (close to 0) indicates that there are little problems regarding that aspect. A high score (close to 1) indicates that there are many problems regarding that aspect. <sup>b</sup>The perception of the change is a measurement of whether the respondents think that their current job improved or deteriorated compared to the situation before the changes. The score can vary between 1 and 3. A low score indicates that the respondents think that this aspect of the work was better before the change. A score of two means that the respondents think the situation neither improved nor deteriorated. And a high score indicates an improvement of the work situation as perceived by the respondents. <sup>c</sup>In italics are the significant differences (*t*-test,  $\alpha = 0.05$ ) between the opinions of the HR assistants with additional and those with replaced tasks

**Table III.**  
HR assistants' opinions  
about job content

### Conclusions and discussion

Summarizing the findings, the WEBA analyses show that job content, as a function of the balance between job demands and decision latitude, improved for HR assistants whose jobs enlarged as a result of the changes. These jobs became more complete, and are therefore more challenging than before. Moreover, there are more job demands, but also more job decision latitude, which results in a more "active" job. For HR assistants whose former advisory tasks were replaced by more administrative tasks related to PeopleSoft's HR module, job content remained at the same "passive" level as before the changes. Whereas the character of the tasks changed, the balance between job demands and decision latitude did not. The changes for both categories were reflected in their opinions about their changed jobs.

Thus, even when a decentralization policy is pursued, job decision latitude is not necessarily enhanced. Two factors need to be distinguished: firstly the new tasks to operate with the HR-module to be implemented and secondly, how these tasks are distributed over the HR-assistants. The first factor leads to a formalization of HR-processes in a strictly formal fashion. Routine data gathering tasks are partly taken over by the system, whilst at the same time the system requires data input according to standardized and technology-enforced procedures. The tight time schedule for data entry work created extra demands. The second factor, decentralization, compensated for this routinization by assigning decision-making to the HR-assistants. However, establishment size turned out to work as an intermediary: in small establishments data entry tasks came to amount to a large proportion of HR assistants' daily work leaving little time left for other tasks. In larger establishments routine work could more easily be divided over several employees. This effect emerged as an epiphenomenon

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of establishment size. When size allowed it, a division of labor occurred, an observation which is very much in line with classic “Taylorization.”

We researched a case which we argued is exceptional: an ERP-implementation that coordinated with an organizational change towards decentralization. Koch and Buhl’s (2001) study of 24 cases using ERP as well as self-managing teams, which are a hallmark example of a decentralized organizational approach, can serve to underpin this statement. In all, but one case, both changes were not aligned and initiated separately.

Given that ERP-software is configurable, any job content (and other economic and organizational) effects arising after ERP-implementation must be ascribed by the combination of the software and the way it has been configured. Whilst the underlying ERP-philosophy may be construed as centralistic, this case study shows that centralization is never the automatic result of an ERP-implementation project: one does not have to “go with the flow.” ERP-systems may also be configured to decentralize decision-making: in granting local authorizations user/employee job decision latitude is affected c.q. realized. Thus, in combination with a decentralization policy “empowerment” may result after the introduction of an ERP-system.

### Practical implications

In practice, implementations seem to be largely “ERP-driven:” the systems are implemented by IT-specialists who follow a technical logic and do not take job content into consideration (Benders *et al.*, 2006). As ERP-systems are configurable and thus socially shaped (Light and Wagner, 2006), this does not necessarily have to be the case. They allow, albeit within the limits of the internal operating logic, for some degree of decentralization. Obviously, insight into an ERP’s potential effects is needed to guide the implementation and foresee likely outcomes. Simulation models and templates may be developed to help ERP-software designers and implementers to assess effects on job content prior to taking configuration decisions. Employees and their representatives could play a role as well (Buhl and Richter, 2004) by participating in the configuration process, pointing out to implementers how their decisions affect jobs (Howcroft and Wilson, 2003). Many misfits between what an ERP-package provides and what ERP-users require may be prevented in the process (Soh and Sia, 2004).

Counter-intuitively, enhanced potential for control and visibility may allow for increasing job decision latitude. An argument against “empowerment” is that it increases managerial uncertainty as employees may take decisions against the organizational and/or managerial interests. By increasing visibility and therefore control possibilities, this risk decreases. From a control perspective, this makes decentralization a “safer” route.

As a result, when implementing an ERP-system managers should look out for possibilities to configure the system in a way that meaningful jobs are created. Decentralizing tasks and responsibilities while visibility increases allows for better jobs and higher levels of efficiency.

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### About the authors

Jos Benders (MBA, 1988; PhD, 1993) holds the chair Organization Concepts at the Department of Organization Studies, Tilburg University and is a senior researcher at the Nijmegen School of Management, Radboud University Nijmegen. He serves as European Associate Editor of "New Technology, Work and Employment," and on the Editorial Advisory Boards of Personnel Review and Tijdschrift voor Arbeidsvraagstukken. His research interests include the development and application of organization concepts, the mutual influences between 'new technology' (particularly ERP-systems) and organizations, team-based working, the history of cellular manufacturing and medieval coinage in the Low Countries. Jos Benders is the corresponding author and can be contacted at: [Jos.benders@uvt.nl](mailto:Jos.benders@uvt.nl)

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Roel Schouteten (MBA, 1995; PhD 2001) is Assistant Professor in Strategic Human Resource Management and member of the Institute of Management Research, Radboud University Nijmegen, The Netherlands. His research interests include quality of working life, especially in relation to organisational and job design, and in relation to individual and organisational performance. He takes special interest in the interplay of technology, work (design), performance and quality of working life. He is editorial secretary of the Dutch journal Tijdschrift voor Arbeidsvraagstukken (Journal of Labour Studies).

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Mohamed Aoulad el Kadi (MBA, 2005) graduated from Nijmegen School of Management on a thesis on BPR-implementation and quality of working life. Currently he is team leader HR Services at Nuon B.V., a large energy supplier in The Netherlands.