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Statutory Regulation and Workers' Competence: The Influence of Dutch Works Councils on the Introduction of New Technology

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A repeated survey carried out among Dutch works councils revealed a lower degree of involvement in technological decision-making than four years earlier, as well as a lower perception of their influence. In all probability, decreased influence related to decreased attention. Their statutory rights are not linked explicitly with the introduction of new technology. Other elements of workers' competence have not been developed enough to give works councils a firm position in design processes, although statistical analysis showed that active councils are able to exert influence, supported by adequate disclosure of information. Yet, many works councils set out to strive for direct influence over organizational change. Where such change is subject to statutory regulation, this can be an appropriate strategy to control major constraints concerning technological change.

1. Introduction

Comparative international case study research in the early 1980s suggested that the influence of both Dutch works councils and trade union groups on the introduction in the workplace of new technology was fairly limited. The influence of local union groups in Sweden and works councils in Western Germany should, on average, be valued higher, as the efforts of the Swedish groups produced more 'best practice', influencing the design of new factories, offices and information systems at an early stage (Levie and Moore, 1984; Levie and Sandberg, 1991).

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Yet, during the 1980s, involving worker representatives, especially statutory works councils, in technological decision-making processes appears to have become a fairly widely accepted practice in the Netherlands. In a large survey carried out in the 12 European Community member states in 1987–8, the Netherlands, after Denmark and Germany, showed the highest degree of participation in investment criteria concerned with new technology. However, this kind of participation remained limited throughout the EC as it is linked with the planning phase of technological change, which management perceive as their prerogative. Of the Dutch managers who responded to the survey, 55 percent stated that their firms at least gave information on investment strategy to worker representatives. For negotiation and joint decision-making, the percentage fell below 10 percent (Germany: 16 percent, Denmark: 15 percent) (Gill et al., 1993: 143–6).

The EC survey results generated optimism in various ways about the development of worker participation in the introduction of new technology in the Netherlands. First, participation in fields connected to the introduction of new technology, such as major issues of work organization (job design, external job control, work measurement, social interaction and so on), is important because data show nine out of ten cases of technological change in the Netherlands are linked to organizational change (Riesewijk and Warmerdam, 1988). This kind of participation had obviously developed substantially during the 1980s. In 1987–8, only one out of ten Dutch managers and worker representatives reported the absence of any involvement of worker representatives in decisions concerning work organization. In this respect, the Netherlands ranked first, along with Germany and the UK. If negotiation and joint decision-making in work organization issues were measured only, the Netherlands ranked fourth, after Germany, Denmark and Ireland (Gill et al., 1993: 131–9). Second, the authors of the EC study suggested the main variables they had identified on which opportunities for worker involvement depend could all work favourably in the Netherlands (Gill and Krieger, 1992; Gill et al., 1993).

These findings seemed to correspond with both the optimistic expectations of Dutch experts of the role of works councils in company decision-making (Teulings, 1985; Looise, 1989; Visser, 1990) and other survey results. For example, in a survey carried out in 1988 on behalf of the *Federatie Nederlandse Vakbeweging* (FNV), the largest Dutch trade union confederation (Berentsen,

1988), 42 percent of the councils involved in technological change perceived their influence as sufficient.

Since these surveys were carried out, developments have occurred in both the implementation of new technology and worker participation in company decision-making. Unfortunately, up-to-date results of comparative European research are lacking in this field. Yet, the 1988 Dutch survey was repeated in 1992 (Tijdens, 1995). We present and discuss its results here.

Our article focuses on two questions. First, to what extent do Dutch works councils exert influence on the introduction of new technology in the workplace and has influence changed since 1988? Second, which variables determine whether works councils exert influence? We outline some major trends in Dutch industrial relations in Section 2 and hypothesize the changes in works councils' influence. In Section 3, we hypothesize five clusters of factors which may explain workers' influence on new technology. Research methodology and data are provided in Section 4. Section 5 treats the empirical results concerning works councils' influence in 1988 and 1992. The determining variables are discussed in Section 6. A concluding discussion can be found in Section 7.

2. Dutch Industrial Relations and New Technology in the 1980s and 1990s

Like Germany, the Netherlands is known for its dual system of worker representation, with trade unions on the one hand and works councils on the other. Dutch works councils have a number of statutory rights that can be used in efforts to influence managerial decisions concerning the introduction of new technology. A number of unions have been using collective bargaining to the same end. We now go into both sides of the system, starting with the unions.

2.1 The Countervailing Power of Trade Unions

Between 1945 and the mid-1980s, the Dutch trade union movement was a stable pillar in the Dutch industrial relations system. During that period, this system was characterized by three main features: the dominant role of government; the reliance on interorganiza-

tional and national consultation; and the high level of centralized bargaining. Mainstream unionism stressed its responsible behaviour in building up the welfare state. The coherence of the underlying corporatist arrangements was based on a high level of institutionalization and far-reaching trust placed in statutory provisions (Visser, 1991: 232).

Since the beginning of the 1980s, a number of socioeconomic developments put both corporatism and union power to the test: an unparalleled process of deindustrialization, the rise of new services and (white-collar) professions, steeply rising unemployment rates, combined with deflationary government policies and a decline in disposable incomes of many employees, especially in the public sector, as well as of people dependent on transfer incomes. Corporatism failed to manage the crises of the labour market and welfare state. Employers gained the initiative. In December 1985, the Dutch unions had little more than a total of 1.5 million members (27 percent of employed workers) against 1.8 million (37 percent) at the end of 1978; union density rate remained at 27 percent. Membership of the unions affiliated to the FNV (Social Democrat/Catholic, with 60 percent of all Dutch unionists in 1993) went down especially, but all unions lost members, including those affiliated to the Christian Christelijk Nationaal Vakverbond (CNV) confederation and the smaller middle management Middelbaar en Hoger Personeel (MHP) confederation (Visser, 1991: 217–8).

The decrease of union power was a gradual process. In the late 1980s, national concertation and coordination proved to have weakened substantially. Union confederations' ability to coordinate their affiliates also diminished. Employers succeeded in obtaining collective agreements that were less uniform. Nevertheless, the bargaining coverage of the FNV, CNV and MHP unions has shown only a moderate decline. In 1990, 71 percent of all private sector employees were covered by collective agreements (Germany: 81 percent; UK: 47 percent; US: 18 percent), against 82 percent ten years earlier. The 1937 Collective Agreement Extension Act, under which government decree can declare agreements binding for all employees in firms or sectors, has been instrumental here (Visser, 1994).

Decentralization towards company bargaining is undoubtedly the trend, although in 1993 only 15 percent of all Dutch private sector employees were covered by single-employer agreements (Visser, 1995). Here lies a main weak point of the union movement:

employers are much better equipped to conduct bargaining at company or firm level. Generally speaking, the system of company union groups initiated by the metal workers' unions in the 1960s and followed by other unions, never reached the status of a mature countervailing power at shopfloor level. In 1987, fewer than half of all groups were represented in union bargaining delegations (Huis-kamp and Risseeuw, 1988). It is unlikely that this picture has changed substantially since.

2.2 The Countervailing Power of Works Councils

The roots of Dutch codetermination at company level can be traced back to the 'factory cores' that were established in the 1880s, partly by enlightened employers, partly by groups of workers (Algra, 1989). After the Second World War, codetermination became highly codified. Under the 1950 Works Councils Act (WOR), workers were entitled to representation in joint councils, chaired by the employer. The role of the works councils remained subservient for almost three decades until the 1979 Works Councils Act. This Act transformed councils in companies with 100 or more workers into 'independent bodies' and gave them the right to meet without the participation of management. Since 1983, a works council is also mandatory for companies with 35–100 workers. Many managers are not very law abiding in this respect and workers in many small companies do not execute their rights, which may explain why only 65–70 percent of all relevant companies comply (Van der Burgh and Kriek, 1992; Klein Hesselink and Evers, 1994).

The number of works council members depends on the workforce and varies between three and 25. Nowadays, the total number of councillors in the Dutch private sector exceeds 50,000. Until very recently, employees' committees existed in the public sector. Government rules entitled them to rights comparable to those of the WOR. Most employees' committees are now also changing into works councils, adding another 9000 councillors. Members are chosen in triennial elections at company level.

Like their German counterparts, the Dutch unions have succeeded in getting members elected to the councils. Although candidature and voting are open to nearly all workers (except those working only a few hours) and not only for union members, 58–68 percent of all councillors continue to belong to either the FNV,

CNV or MHP unions (Huiskamp and Risseuw, 1988; Klein Hesse-link and Evers, 1994). This share more than doubles the unionized section of the electorate.

Trade union and works council membership largely overlap. In both the Netherlands and Germany, the majority of lay union officials can be found on works councils. Yet, the Dutch system is the more 'dual' of the two. The German system tends to show mutual incorporation of trade unions and works councils as representative bodies (Streeck, 1984). Their coalitions are expressions of mutual dependence (Müller-Jentsch, 1986: 228). On the one hand, the German unions have succeeded in integrating their company-level activities into the work carried out by the works councils. On the other hand, works councils of large German companies exert considerable influence on union policy-making, as did the councils of the car manufacturers in the metal workers' union welcoming technological innovation as a competitive measure (Kern and Schumann, 1984: 125).

In the Netherlands, mutual dependency is increasingly developing into one-way traffic, with the legal rights and activities of works councils as pushing factors. Visser (1991: 204) has observed that 'while far from being part of, or dependent upon, the larger union organization, the councils have become the centre of worker organization in firms'. The power of the unions at company level increasingly depends on (the strengthening of) works councils. Yet, we should add that in a number of cases where councils achieved substantial influence over technology, the role of paid union officials and the use of company technology agreements have been important, if not decisive. This was especially true between 1985 and 1990 (Van Klaveren, 1991).

2.3 Trade Unions and New Technology

Since 1982, the Dutch unions have tried to gain influence on technological changes at workplace level by 'negotiating technological change'. Following primarily Scandinavian and German examples, they considered entering into technology agreements as the best strategy. Indeed, a number of provisions on the introduction of new technology have been laid down in Dutch collective agreements. In 1989, 58 out of 85 major agreements, covering 1.3 million (out of 2.3 million) employees, contained such provisions.

Nearly all these agreements focused on procedures, and 30 included additional consultation rights for works councils. The majority were not exactly obligatory; most formulations were vague (Department of Social Affairs and Employment, 1989). Only a few technology agreements today are as substantive and mandatory as the unions strived for ten years earlier (Sprenger and Van Klaveren, 1994).

In the mid-1980s, the lack of union influence at shopfloor level became a matter of serious concern for union leadership. Obviously, the growing power of works councils did not help the trade unions to improve their plant or company effectiveness as had occurred in Germany (Visser, 1991: 234). A first union response was to try and synchronize the roles of trade union representatives and works councils in processes of change, also by means of collective agreements. The printing and publishing unions and those in the service sector followed this course. As early as 1985, eight out of 22 major collective agreements, most of them in the printing industry, contained provisions concerning employment and new technology in which the works council played a part (Looise, 1985).

A second step was to make advances to the works councils. Inspired by the Technology Advice Bureaus established by the German metal workers' union and the DGB confederation (the German trade unions council) and with the help of government grants, FNV, CNV and MHP founded technology support centres. From 1987, these centres were intended as support for both union groups and works councils. However, these centres did not play a pivotal role in bringing about coalitions between unions and the councils. Two years after the start of the FNV centre, an evaluation report concluded that servicing the union machinery prevailed over supporting works councils (Bilderbeek and Buitelaar, 1989: 8).

Today, Dutch trade union strategies are less oriented towards influencing technological change and more towards issues connected with the organization of work. Dutch empirical studies pointing out possibilities of successful worker involvement, especially in software design and in organizational structures (see Buitelaar, 1988), definitely had an impact on trade union policy. The same may be true of the development and spread of the Dutch sociotechnical systems (STS) approach (Van Eijnatten, 1993). All major unions are making efforts to incorporate vocational training, career structuring, working time schedules and other aspects of the internal labour market into collective agreements. In doing so,

they are entering fields where many works councils have already developed competence, engaging councils in an often uneasy co-management relationship (see Visser, 1991: 235).

2.4 Works Councils and New Technology

The statutory rights of the Dutch works councils did and do not lead to easy involvement in the design of technological change (Levie and Sandberg, 1991: 240). In spite of its extended provisions, the WOR does not link codetermination explicitly to the introduction of new technology. Management is not obliged to ask either advice or consent of the works council when information systems are developed and implemented. The councils can exert their advisory rights only if the proposed introduction of new technology represents 'important' reductions, expansions, investments or other changes in company activities (WOR Art. 25). In this case, management is obliged to seek the council's advice 'in time', giving the council the opportunity to influence management decisions. The council cannot prevent a managerial decision from being carried out; all it can do is postpone it (and perhaps give rise to reconsideration). Works councils have stronger, that is approval, rights if new technology is linked to changes in pay systems, job evaluation schemes, working time schedules and systems concerning health, safety and employees' well-being (WOR Art. 27). As a result, the councils tend to develop competence in coregulating internal labour markets. They are legally charged with monitoring collective agreements (WOR Art. 28), but they cannot (re)negotiate these agreements.

In a number of cases, the application of WOR articles other than 25 and 27 has proved rather effective for works councils seeking to influence technological and organizational change. Such articles include rights to establish permanent committees, to make use of internal and external experts, and rights concerning the disclosure of company information (Van Klaveren, 1991). Moreover, the Act on Working Conditions, which came into full force in 1990, granted additional consultation and information rights to the councils on health, safety and workers' well-being.

In the mid-1980s, it looked as if a substantial number of works councils would take over bargaining on primary terms of employment from the unions. Yet, 70 percent of the council chairs

favoured a greater additional role for the councils, in the form of monitoring and fulfilling collective agreements negotiated by the unions (Huiskamp and Risseuw, 1988). That is exactly what has happened since. The number of provisions in collective agreements to be monitored and/or specified by the councils has grown. The emphasis has been shifting from employment, new technology and working conditions towards training, career structures, equal opportunities and childcare. There is some evidence that the 'old' issues are better monitored. A 1994 FNV study, covering 346 works councils in one region, found that 74 percent controlled working condition provisions. Control of other kinds of provisions ranked much lower. Many councils find this new, additional control task hard going. Recently, councillors often express a need for stronger union support in this respect (Reemst et al., 1994).

In the 1990s, the number of issues the councils have to monitor has grown, probably at the cost of attention to new technology. Thus, in Section 5, when we compare the influence on the workplace introduction of new technology in 1988 and 1992, we hypothesize that the share of works council attention to new technology has decreased (Hypothesis 0A). In this period, the Act on Working Conditions has been introduced and new technology has become more familiar. Therefore, we hypothesize that the influence these councils exert on new technology has grown (Hypothesis 0B).

3. Explaining Workers' Influence on New Technology

This section reviews literature which attempts to explain the influence of workers and their representatives on the introduction of new technology. As Anglo-Saxon literature focuses on the influence of trade unions while German and Dutch literature treats both works councils and unions, we consider them equally. The explanatory factors are clustered into five groups. Hypotheses are formulated for each cluster.

3.1 Organizational Background

Several authors have discussed organizational background variables, linked to management strategies in the broadest sense,

including product mix, marketing, investment, technology and finance, and have attempted to relate them to workers' influence (Batstone et al., 1987; Deery, 1989). We have derived two variables that may be of relevance: sector and size of the firm. Hypothesis 1A argues there are differences between sectors as far as the influence of works councils on new technology is concerned. Hypothesis 1B suggests that the more staff employed by a firm, the larger the council's influence will be.

3.2 Type and Scale of Technological Change

The impact of type and scale of technological change on workers' influence has been discussed by Levie and Moore (1984), Deery (1989) and Reshef et al. (1994). These factors are supposed to be effective through management dependence on labour. This dependence is rather low in cases where management invests in standardized industrial production technology in order to reduce the cost of manufacturing products. This also holds true where office technology is brought in to reduce costs by standardizing data collection or processing. In these cases, skilled workers' knowledge and workers' insights are not particularly instrumental in generating successful process innovation. As a result, management will show little inclination to involve workers or their representatives in processes of change (Deery, 1989: 119–20).

In contrast, management which aims to pursue competitive strategies, emphasizing high product or service quality, product innovation and related short product cycles, will have to rely strongly on workers' creativity and problem-solving capacity (De Sitter et al., 1990). Therefore, management using new technology for purposes of product or service innovation may be more inclined to make room for workers' participation. A collaborative management style may smooth non-standard, complex and lengthy processes of technological change. It might be rational for management faced with such changes to apply STS concepts and, in doing so, to seek the commitment of (groups of) workers and even to promote the involvement of trade unions and/or works councils. Indeed, Keith Newton (1989) has argued that 'the fullest development of the STS approach might be possible only when both union and management are present and committed to fundamental change' (Newton, 1989: 42; for 'union', one can read 'union and

works council' for the Dutch situation).

The scale of technological change refers to the complexity of the development process, namely the number of employees whose work will ultimately be influenced by technological change and the duration of systems development. The WOR entitles works councils to be involved in complex changes because of the assumed impact on the workforce. Anglo-Saxon researchers have argued that worker representatives will encounter great difficulties in injecting social criteria into the development of complex new technology (see Batstone et al., 1987). This argument might be reversed in an industrial relations system where management is sooner or later obliged to seek the advice or even consent of the works council. In this case, it may be rational to enrol the commitment and 'incrimination' of that council in earlier stages of decision-making, even if dependency on skilled worker knowledge is low. Such management policies have been observed in a number of Dutch cases (Tijdens et al., 1989; Van Klaveren, 1991). They may point to a sophisticated managerial bias towards non-union forms of workers' participation, as can be observed openly in the Anglo-Saxon sphere, such as in Canada (Newton, 1989: 43; Reshef et al., 1994: 524).

Processes of technological change, especially of a complex nature, are vulnerable and carry the risk of serious delays, overspending and even total failure (Riesewijk and Warmerdam, 1988; Tijdens, 1991). If delays in systems development take place, calling upon the problem-solving capacity of workers may be rewarding for management. This could well result in a strengthened position of the works council.

To conclude, we hypothesize that technology used for product or service innovation relates to more influence of the works council (Hypothesis 2A). Furthermore, the more complex the development process, the more influence the works council may exert (Hypothesis 2B); and the more delays and the lengthier these delays, the more influence the works council may exert (Hypothesis 2C).

3.3 Management Styles

Local managerial discretion and preexisting management styles, especially those concerning internal labour markets, industrial rela-

tions and workers' participation, have been discussed by Deery (1989), Levie and Sandberg (1991) and Reshef et al. (1994).

A more specific yardstick for a collaborative or participative management style linked with the development of a new technological (information) system may be the spread of user participation. Much of the literature on such participation has been optimistic, in the first place regarding the assumed positive relationship between user participation and the success of systems development. However, recent analyses do not justify this assumption (Lei, 1994; Cavaye, 1995). A second element is optimism about the possibilities of gearing systems requirements to users' interests and to genuine workers' interests by way of well-organized decision-making processes. It was suggested that answers to questions such as which shopfloor knowledge is required to develop an information system of good quality, could be linked directly with answers on how good quality work can be created in implementing a new system. Indeed, results of the 'Scandinavian approach to systems development' indicate that development processes could be facilitated and stimulated by a collaborative search for the quality of work (Greenbaum and Kyng, 1991). However, it should be noted that nearly all these results were embedded in best practice cases. Management and workers' representatives succeeded in reaching structured processes of joint decision-making. Local union groups linked user participation with union investigation and negotiating strategies (Ehn and Kyng, 1987).

Debates among Dutch unionists and works councillors in the 1990s show a shift away from the often unreserved acclaim for user participation of the 1980s. Their experiences bolster the idea that participative development processes need to be completed by genuine workers' efforts. Such efforts may add impact to the input of social criteria in the core decision-making area, which would otherwise be dominated by economic and technical considerations.

Nevertheless, we hypothesize that projects with user participation relate to more influence for works councils (Hypothesis 3A) and that the higher the number of users involved in user participation related to the number of employees whose work will ultimately be influenced by new technology, the more influence the council will exert (Hypothesis 3B).

3.4 Workers' Competence

Workers' competence comprises four elements: statutory regulations and agreements at company and shopfloor level, including the disclosure of company information; the availability of trade union and works council resources, including training and education programmes and support centres; the development of in-depth competence, including tested strategies to guide and support the rank-and-file in processes of change; and the mutual relationship between workers, union members, union representatives and works council members, including a minimum degree of group solidarity and conflict consciousness (Batstone et al., 1987; Deery, 1989; Levie and Sandberg, 1991; Gill and Krieger, 1992).

In the 1980s, the first element, especially the disclosure of company information, was the focus of much attention among worker representatives all over Europe. The belief was widespread that lack of information was a major impediment in gaining influence on technological change. As early as 1984, the results of a European research project seriously questioned this idea. Lack of information as such did not prove to be decisive. Worker representatives had to select information for specific aims that developed over time, alongside the development of detailed substantive demands. The latter development had to draw heavily on the other three elements of workers' competence. This research also gave the first reliable indications that, in the Dutch situation, active and persistent councils were able to achieve substantial and lasting influence on new technology (Levie and Moore, 1984).

We hypothesize that works councils facing lack of information will exert less influence (Hypothesis 4A). We also hypothesize that the more active the councils are, the more influence they may exert (Hypothesis 4B).

3.5 External Integration of Workers' Representation

External integration of workers' representation can be understood in the Dutch situation as the degree of cohesion between the workplace and company organization on the one hand, and the official union and works council structures on the other, including cooperation and coordination between union structures and works councils (see Batstone et al., 1987; Visser, 1995).

We have already indicated the overrepresentation of union members in the Dutch councils. The share of councillors belonging to the FNV, CNV and MHP unions is more than double the share of union members in the electorate. In the 1980s, research by Teulings revealed that a comparatively high percentage of FNV members increased the chance for a works council to be active; almost all 'front-runners', that is councils with a high level of activity, were dominated by FNV members (Teulings, 1981, 1985). Our assumption is that these general findings also hold true for activities concerning the introduction of new technology. As we have already hypothesized that a more active works council will exert more influence on new technology, it follows that a council comprising a high percentage of FNV members will also exert more influence.

We could trace only a small group of front-runners among Dutch councils active in the years 1988–94 that could rightly claim substantial results on employment and quality of work. The efforts and results of this rather permanent group, between 30 and 35 in number, have been reported in numerous conferences, seminars and articles. Representatives of a second group of about the same size said they had made comparable efforts, but complained about the lack of results. They appear to have followed a more technology-oriented approach than the group of front-runners (Van Klaveren, 1996).

As we have indicated, the assistance of paid union officials and the use of company technology agreements have been important, if not decisive, factors in best practice cases. Even then, a number of worker representatives' efforts to develop influence on new technology failed in the early stages. This usually led to serious discouragement on the workers' side and to weaker, less well-founded efforts later (Tijdens et al., 1989). Such discouraging effects were visible in eight out of 12 well-documented cases where workers' competence and external integration of workers' representation developed rather well between 1985 and 1990. In five of these cases, the works councils involved were able to recover. They reached arrangements covering training, staffing levels and working time schedules, and safety and health conditions. These results were reached after substantial support activities by union officers and, in four out of five cases, using technology agreements between employers and trade unions. Yet, the two cases (out of 12) in which the council had concluded a technology agreement with the

employer at an early stage developed more smoothly in the sense that they did not show such deep troughs and related discouraging effects (Van Klaveren, 1991).

Finally, we test the hypotheses that the higher the share of FNV union members, the more influence works councils will exert (Hypothesis 5A), and that technology agreements between employers and trade unions or works councils will enlarge influence (Hypothesis 5B).

4. Research Methodology and Data

We focus on two questions, one concerning the changes in the influence exerted by works councils, the other relating to explanatory factors. We studied changes in influence by repeating a 1988 survey in 1992 (Berentsen, 1988; Tijdens, 1995). Both surveys were concluded under the auspices of the FNV. The questionnaires covered questions on the number and nature of technological changes within the firm; the involvement of the works council in the process of decision-making; the information the council had received; and the influence the council had exerted on various aspects of decision-making. Background information was requested on the council and the firm. In the 1992 survey, some questions were omitted or adjusted because of a high non-response rate in 1988, while a number of new questions were added. The 1992 questionnaire comprised 60 questions.

As in 1988, 1000 addresses were sampled from an FNV database containing several thousand addresses of works councils (a reliable national database of works councils is lacking in the Netherlands). The selected councils received a letter requesting their chair, secretary or ordinary members to complete the questionnaire. Membership of an FNV union was not a prerequisite. Also, full anonymity was guaranteed. As a result, it was not possible to make out whether part of the works councils which had responded in 1988 were among the 1992 selection. In 1992 226 questionnaires were returned, representing a 23 percent response rate, compared with 208 questionnaires (25 percent) in 1988 (Table 1). These response rates do not differ from comparable surveys, although admittedly they are quite low.

In the 1992 survey, 40 percent of the works councils were from the service sector, 22 percent from manufacturing industry and 24

percent from the public sector. In 1988 the response from the service sector was lower and that from manufacturing industry higher. Thirty-two percent of the councils represented firms of 35–100 employees, another third firms between 100 and 300 employees, with the remaining third representing firms with over 300 employees. Except for a lower percentage of works councils in firms with 35–100 employees, the firm size distribution was nearly the same in the 1988 survey. In both 1988 and 1992, the councils numbered on average eight members, of whom 51 percent were members of an FNV union. We consider the comparability of the samples sufficient.

Was there a selection bias in the 1992 survey? In a survey carried out among over 1000 Dutch works councils, 34 percent discussed new technology at least once in 1991 (Bruin and Van den Tillaart, 1991). In our survey we found that 162 out of 220 councils (74 percent) had at least once discussed the issue. Our higher percentage may point to a bias, overestimating the involvement of councils in technological decision-making. A related possible selection bias concerns the percentage of FNV union members: 51 percent, against 45 percent in a larger sample (Klein Hesselink and Evers, 1994, covering 1253 councils). Yet, divisions of our 1992 sample by sector, firm size and council size come rather close to those in larger Dutch samples (besides Klein Hesselink and Evers, 1994, see also Van der Burgh and Kriek, 1992, with 4010 works councils responding).

Influence is the dependent variable in our two questions in this article. Methodologically, this raises two issues, namely how the degree of influence is measured and to which domains influence applies. In survey research in this area the degree of influence is self-defined by the respondent (see Gill et al., 1993), whereas in most investigations where decision-making processes are reconstructed the degree of influence is interpreted by the researcher (see Van Klaveren, 1991). In the 1988 and 1992 questionnaires, influence was self-defined too. The works councils, having answered many questions about the technological change at stake, were finally asked to indicate their influence on this specific change on a four-point scale (see Table 2). As far as the domains of influence were concerned, the works councils were also asked to indicate which domain had been influenced mostly. Four domains were distinguished, namely technical design, costs and benefits, organizational changes and the social impact of changes.

5. The Influence of Works Councils

We now try to answer our first questions, to what extent do Dutch works councils exert influence on the workplace introduction of new technology, and has the influence of works councils changed, by comparing the 1992 results to those of 1988. Below follows a discussion of Hypotheses 0A and 0B.

5.1 Technological Changes

Both surveys asked whether the works council had faced technological changes within the last three years. In the 1988 survey, 192 out of all 208 responding councils answered in the affirmative, as against only 159 out of 226 in the 1992 survey (92 vs 70 percent, see Table 1). Moreover, the councils facing technological changes in 1988 mentioned on average 3.5 technological changes, while this figure had fallen to 2.7 in 1992. Although all available evidence, including national statistics, indicates the increased importance and spread of information technology in the intervening years, fewer councils said they had been faced with technological changes! This response is consistent with the lower percentage of works councils affirming they had a special technology committee: 17 percent of all councils in 1988, against only 9 percent four years later. It seems reasonable to assume that works councils are perceiving fewer technological changes because these changes have become everyday practice, especially if they are small, incremental and of a standardized kind.

In Hypothesis 0A we suspected that the percentage of councils involved in decision-making had decreased. This hypothesis is not rejected. In the 1988 survey, 126 councils were involved; in 1992 this figure was 103 (61 against 46 percent). However, if once faced with

TABLE 1
Works Councils and their Influence on New Technology

Year	1988	1992
Number of works councils	208	226
of which confronted with technology	192(92%)	159(70%)
of which involved in decision-making	126(66%)	103(65%)

technological changes, the councils' involvement in both surveys was about equal (66 percent or 126 out of 192, against 65 percent or 103 out of 159; see Table 1). Thus, the decreased percentage of councils involved in decision-making is because fewer technological changes are observed.

We based this hypothesis on the assumption that the number of issues works councils have to deal with has grown. One of the questions added to the 1992 survey concerned the organizational changes that had taken place in the firm over the last three years. Nine out of ten councils noted such changes, which occurred on average 4.0 times. Organizational changes took place more frequently than technological changes; the latter had probably become of minor importance.

5.2 Influencing New Technology

In Hypothesis 0B we stated that works councils' influence has grown over the years. Table 2 shows that the hypothesis has to be rejected: the reverse is the case. In 1988, the works councils exerted more influence than they did in 1992: 69 against 51 percent of the councils defined their influence as moderate or sufficient. These percentages are consistent with answers on more specific questions about the nature of influence: in 1992, relatively more councils whose influence was at least moderate, saw it mainly as the limitation of negative consequences (29 percent in 1988, against 48 percent in 1992).

TABLE 2
Distribution of Works Councils by Level of Influence

Year	1988	1992
Sufficient (value label 3)	52(42%)	19(18%)
Moderate (2)	34(27%)	34(33%)
Insufficient (1)	23(18%)	31(30%)
Not at all (0)	15(12%)	15(15%)
Don't know/missing	2(2%)	4(4%)
All	126(100%)	103(100%)
Mean value	1.99	1.58
Standard deviation	1.05	.97

T-value = 3.0559, d.f. = 21, *p* < .01.

The domains that the works councils tried to influence remained stable. The 1988 survey confirmed that the councils worried mainly about the social and organizational aspects of the introduction of new information technology. In 1992, the same pattern emerges. The social and organizational aspects of technological changes were still paramount. If councils exerted influence, that influence was located nearly exclusively in these domains.

Works councils with little or no influence were asked to indicate the reasons for this lack. The reasons most frequently mentioned were the same in both surveys, although the order had changed: no disclosure of information, 'sneaky' automation and lack of own knowledge. As far as the last item was concerned, in 1988 and in 1992 the councils ranked lowest their knowledge of technical design, followed by costs and benefits.

Influence has decreased, surprisingly, because several conditions within the firm were more favourable in 1992. First, compared to 1988, the 1992 survey presented a more promising picture when responses on first-time information were considered; now, 36 percent of involved councils are informed in the exploratory phase (24 percent in 1988). Second, the majority of councils stated their overall knowledge was sufficient to exert influence, against a minority in 1988. Third, in 1992 disclosure of information hardly posed any problem for the majority; the share of the councils stating they were satisfied with information rose to 52 percent (37 percent in 1988). Fourth, in cases where information was missing or incomprehensible, many councils showed they had learnt to rely on their own resources. In nearly half of all cases additional information was acquired from internal data processing staff – on a much wider scale than in 1988. Obviously, the need for access to computing and other technical personnel has been widely recognized and aversion to such contacts overcome.

5.3 Conclusion

Our first hypothesis (0A) was that the percentage of councils involved in decision-making about new technology would have decreased, but that the influence of these councils would have

grown (0B). The former thesis proved correct, due to the fact that in 1992 they faced fewer technological and more organizational changes than in 1988. Hypothesis 0B, however, was rejected. The influence exerted by councils had not grown. Moreover, in 1992 more councils said their role had only limited negative consequences. This result is even more surprising as conditions for exerting influence had obviously improved, namely councils succeeded in both gaining more information and acquiring it at an earlier stage. In all probability, decreased influence relates to decreased attention. To conclude, the 1988 survey results showed a rosier picture than those of 1992.

6. The Determining Factors of Influence

In Section 3 we developed a number of hypotheses to examine which variables determine the extent to which works councils exert influence on the introduction of new technology. These hypotheses are tested in this section. As the 1992 survey comprised more questions than in 1988, the analysis will only be carried out for 1992. This ANOVA analysis focuses on the group of 159 works councils that had been facing technological changes. The results are presented in Table 3.

6.1 Organizational Background

We hypothesized the effects of two variables in this respect: sector and size of the firm. Four sectors were distinguished. The largest group of works councils came from manufacturing industry and construction, followed by the public sector. Hypothesis 1A argued there would be differences between sectors as far as council's influence was concerned. This hypothesis had to be rejected: we found no sectoral differences.

As far as firm size of the firm is concerned, we distinguished four categories. The largest group of councils were found in firms having

TABLE 3
Distribution, Mean Values and Standard Deviations of Influence and F-Values for
One-Way ANOVA Analysis of the Variables Below and Works Councils' Influence
(Scale: 0: No Influence to 3: Sufficient Influence, $n = 159$)

Variable Hypothesis	Distribution	Mean Value	SD	F-Value and Significance
<i>1A Sector</i>				
Man. industry, building	32%	1.26	1.03	
Commercial services	20%	1.38	0.97	
Public sector	27%	1.35	0.98	
Remaining group	22%	1.13	1.09	
All	100%	1.27	1.01	0.36 NS
<i>1B Firm size</i>				
35–100	29%	0.85	0.93	
100–500	43%	1.36	0.91	
500–1000	15%	1.55	1.09	
> 1000	12%	1.73	1.14	
All	100%	1.28	1.01	4.57**
<i>2A Type of technological change</i>				
Hypothesis 2A was not possible to test				
<i>2B Complexity of technological change</i>				
Not complex	27%	0.87	0.83	
Moderately complex	45%	1.18	0.99	
Complex	28%	1.72	1.00	
All	100%	1.28	1.01	7.60**
<i>2C Delays in systems development</i>				
No delays	34%	1.56	1.06	
Delay < 1 year	35%	1.18	0.89	
Delay 1–2 years	18%	1.50	0.94	
Delay > 2 years	12%	1.35	1.00	
All	100%	1.39	0.98	1.05 NS
<i>3A User participation</i>				
No participation	19%	0.79	0.88	
Moderate participation	59%	1.35	0.97	
Intensive participation	23%	1.71	1.00	
All	100%	1.33	1.00	6.12**

TABLE 3 *contd***3B** *Users in participation/final users*

0–25%	30%	1.07	0.99	
26–50%	35%	1.33	1.02	
51–75%	12%	1.56	1.03	
76–100%	22%	1.55	1.01	
All	100%	1.33	1.02	1.49 NS

4A *Disclosure of information*

Insufficient information	32%	0.66	0.68	
Moderately sufficient information	41%	1.42	0.93	
Sufficient information	27%	2.02	0.89	
All	100%	1.35	0.99	25.36**

4B *Works council's activity*

Not active	26%	0.363	0.65	
Moderately active	38%	1.08	0.82	
Active	36%	1.98	0.81	
All	100%	1.27	1.01	46.99**

5A *Share of FNV members*

< 33%	25%	1.19	0.83	
34–67%	45%	1.36	1.00	
> 67%	29%	1.37	1.16	
All	100%	1.32	1.01	0.35 NS

5B *Technology agreements between employers and unions or works councils*

No agreement	64%	0.93	0.87	
Agreement	36%	1.60	1.15	
All	100%	1.16	1.02	7.22**

** $p < .01$, NS is not significant.

between 100 and 500 employees, followed by those with 35–100 employees. Hypothesis 1B argued that firm size would have an impact on the degree of influence the councils exerted. This is true. Table 3 shows: the larger the firm, the greater the influence.

6.2 Type and Scale of Technological Change

The technological changes mentioned by the works councils were located *most frequently* in the administrative field: word processing, automation of book keeping and personnel information systems. Forms of industrial automation most frequently indicated were computer aided design (CAD) and computer aided manufacturing (CAM). Respondents were asked which of these changes were the *most important*. The next questions in the questionnaire applied to this most important change, called 'the automation project'. Company-specific forms of automation were mentioned most frequently, both in the administrative field (by 59 percent of the councils) and in industrial automation (9 percent). Unfortunately, we were therefore not able to relate product or service innovation to the degree of influence of works councils (Hypothesis 2A). The company-specific projects could not be classified according to type of innovation.

Is complexity of the automation project related to council's influence, according to Hypothesis 2B? Complexity is defined as a compounded variable, indicating the number of workers whose work is influenced by the technology and the duration of systems development, that is the time between the date of origin and the date of implementation. For a more realistic assessment of complexity, we also included in this compounded variable the number of social and organizational changes and the number of technological changes in the firm. Hypothesis 2B was confirmed: the more complex the project, the more influence works councils exerted.

Hypothesis 2C dealt with delays in systems development. Nearly half (49 percent) of all works councils reported delays of at least six months since the automation project was started. The image of muddling through and delays that emerges from the survey results is striking. Twenty percent of the automation projects had originated less than two years before the survey was conducted, 64 percent two to six years before, 9 percent six to 11 years before and 7 percent 12 years or more before the survey. The relative frequency of delays was the same in the oldest category of changes (started six or more years previously) and in the younger ones (started two to six years previously). The results do not show much progress in the development of the 'learning organization', advocated so strongly by numerous and diverse authors, especially in the field of new technology. According to those councils who indicated

reasons for delays, 'poor management' scored 33 percent, and 'conflicts between departments concerning the technological change', 18 percent. Twenty-five percent indicated an external factor, 'delays by the suppliers'. Hypothesis 2C argued that the longer the delays, the greater the influence. Yet, the length of the delays had not a significant impact on the councils' influence. This hypothesis was rejected.

To conclude, type and scale of technological change determine the influence that works councils exert in one way only, namely as the complexity of the project at stake increases, the councils' influence will be greater. The impact of delays was not significant and the impact of type of technology could not be measured.

6.3 Management Styles

A next cluster of variables points to a wider classification of management styles, more specific to user participation. Hypothesis 3A related user participation to works councils' influence. Intensive participation was used in 23 percent of the automation projects, whereas moderate participation was used in 59 percent. Another 19 percent had no participation at all. The hypothesis 3A was confirmed: the more intensive the user participation the greater the influence.

Hypothesis 3B related the percentage of employees involved in user participation to the influence of works councils. Where management practised user participation, usually one to two out of four employees involved in the technological change participated. The larger the project, that is the number of workers whose work is ultimately influenced by new technology, the larger the number of participating users ($r = .44$, $p < .01$). Women were hardly under-represented in user participation. The hypothesis argued that the higher the number of users involved in user participation related to the number of employees who will be influenced by new technology, the more influence the council will exert. Hypothesis 3B was not supported.

To conclude, user participation as such allows for greater council influence, but the relative share of users does not relate to its influence. Moreover, we found no significant relationship between the occurrence of user participation and delays in system development and implementation. Thus, our results do not contradict the

conclusion of Lei (1994), who argued there is no clear relation between user participation and the success of systems development.

6.4 Workers' Competence

We developed Hypothesis 4A arguing that works councils facing lack of disclosure of information will exert less influence. Works councils responding to the survey could rate information disclosure on various items as more than or less than sufficient. The highest rate for sufficient information disclosure was assigned to the future organization structure (63 percent of the councils), followed by information about social aspects and future staffing. Information disclosure on technical design, costs and benefits, decision-making processes and future quality of work was most often ranked as insufficient (between 41 and 49 percent of the councils). In fact, councils that tended to evaluate information as 'sufficient' more often, indicated they exerted more influence. Thus, Hypothesis 4A was confirmed.

Hypothesis 4B stated that the more active a works council, the greater its influence. Activity is defined as a compounded variable, indicating the number of councillors involved in technology issues; the presence of a special technology committee; the gathering of additional information on the technological change at issue; and the organization of meetings or the providing of written information to involve the rank-and-file. Hypothesis 4B is confirmed quite convincingly: more active councils have more influence. A note here – there is no relationship between the councils' activities in this respect and the intensity of user participation or the number of workers involved in user participation.

6.5 External Integration of Workers' Representation

In the survey, the works councils have on average eight members, of whom 4.2 are members of an FNV union, 1 is a member of a CNV union, 1.5 are not organized at all and the remaining group is organized in other unions. Hypothesis 5A argued that the higher the share of FNV union members, the more influence the council would exert. However, the survey results show there is not a

relationship between the councils' influence and the share of FNV union members. Additionally and not shown in Table 3, we also found no relationship with the share of unorganized councillors or councillors organized in other unions.

It could be expected, based on Section 2, that the survey would show the occurrence of a limited number of technology agreements between employers and trade unions. This proved correct. Only one out of ten firms was reported as having such an agreement. Technology agreements between employers and works councils proved to be of greater importance. One out of three firms had a technology agreement. Most of these agreements referred to the timing as well as to the substance of company information. Hypothesis 5B argued that technology agreements between employers and trade unions and/or works councils would increase the chance that the council would exert influence. The hypothesis was supported.

6.6 Explaining Works Councils' Influence

The reader might want to know how the tested variables 1 to 5 jointly determine the works councils' influence. We have only chosen those variables that show a significant relationship to the dependent variable. These are firm size, project complexity, user participation, information disclosure and council's activity. We did not include the dichotomous variable presence/absence of technology agreements. In Table 4 the results of the regression analysis are presented. It shows that the works council activity level still is a determining factor, as is disclosure of information, but that project

TABLE 4
Regression Analysis with Works Council's Influence as Dependent Variable
(*n* = 159)

Variable	B	T-Value and significance
Complexity of technological change	.0103	(.354) NS
Works council's activity	1893	(7.528)**
Disclosure of information	.0989	(4.573)**
Constant	-.1803	(-1.121) NS
Multiple <i>R</i> .7354 <i>R</i> ² .5408 <i>F</i> = 53.4052	Signif. <i>F</i> = .0000	

** *p* < .01, NS is not significant.

complexity, user participation and firm size do not contribute significantly to the explanation of works councils' influence.

Therefore, we can end this section by concluding that a works council developing a number of activities directed at technological change is able to exert influence, both on simple and on complex projects – assuming this council is able to gain adequate information.

7. Concluding Remarks

The results of the 1992 survey suggest that workers' representatives, namely works councils, in the Netherlands have achieved comparatively good opportunities to secure access to managerial decision-making on the introduction of new technology, even if the processes in question are complex and lengthy. Certainly, there is a growing percentage of councils which are no longer willing to spend their time on mere debates about information disclosure and user participation, but which make serious efforts to become involved in decisions on the relevant technological and organizational changes.

However, one cannot ignore the fact that in 1992 only 18 percent of all 'involved' works councils described their influence as sufficient, as against 42 percent in 1988. These results seem to be consistent with other Dutch research presented earlier, suggesting the number of councils with substantial influence on technological change has shown little or no growth since 1988. A large majority of Dutch works councils is still confronted with a wide discrepancy between opportunities and actual influence on technological change. Although statutory regulation leaves room for improvement in the Netherlands, the potential for developing genuine workers' competence and effective external integration of workers' representation has to be stressed. It is worthwhile to pursue the debate about the content of workers' competence, especially in view of the stimulus for the councils to develop alternatives concerning job design and work organization.

Dutch works councils tend to give themselves a low score on their own technical knowledge. In 1988, this perception had a rather strong negative influence on their overall perception of available know-how. No such influence could be discovered in 1992. This points to a shift in the aspirations of the councils that we witnessed

by training and advising them in the four intervening years and beyond. They took care of possibilities for change mainly in organizational structures, to a lesser extent in software and hardly at all in hardware. This shift is on a par with the change in Dutch trade union policies pointed out in Section 2.

Many Dutch works councils and trade unions set out to strive for direct influence over organizational change for a number of reasons. First, a large majority of worker representatives continue to encounter great difficulties in becoming involved in decision-making in the early stages of technological change. Second, nine out of ten cases of technological change are coupled with organizational change. Third, mobilizing shopfloor competence to negotiate work organization may be assessed as generally less difficult than influencing technological change, presumably because it seems closer to workers' day-to-day experience. Finally, as long as the statutory rights of Dutch councils do not enforce their involvement in technological change, councils tend to focus on issues of work organization. Managerial decisions concerning these issues will be subject to councils' consent or at least advice – sooner or later.

It seems an appropriate strategy for most Dutch works councils to aim primarily at influencing the major constraints concerning technological change, that is, to concentrate on job design, social interaction, vocational training, career structures, working time and job evaluation schemes, and at effecting legal obligations for the employer concerning health, safety and workers' well-being. Efforts in this direction may be more effective in influencing managerial plans and may imply less risk of discouraging workers and their representatives. This advice may not only or specifically apply to the Dutch situation, but to those national industrial relations in which the involvement of works councils (or local trade union groups) in matters of work organization is subject to statutory regulation.

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