

# Performance Management for Teleworking: the Role of Workflow Management Systems

*'I can't see what you're doing – but I know you're doing well!'*

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**Abstract:** This paper looks into Performance Management (PM) for teleworking and how Workflow Management Systems (WfMSs) can support this. We first discuss the importance of PM for teleworking, and go on to explain Workflow Management Systems and how these support PM. An example case study is presented, where a WfMS supports both Performance Management and teleworking. We find that it is essential that teleworkers' performance is managed explicitly to achieve any projected organisational performance improvements of teleworking. A first contribution of WfMSs is that they support the implementation of any required process enhancements, both for PM and teleworking. Digitising workflows means that tasks, as well as any necessary data and documents, can be accessed from any location. WfMSs also support the monitoring of, and feedback on teleworkers' performance by providing the required data. This data can also be used for strategic level evaluation of organisational performance targets. In conclusion, we find that WfMSs have particularly useful capabilities, not just for supporting remote operational performance management, but for supporting a vertically integrated Performance Management approach, independent of employees' locations.

## 1 Introduction

This paper seeks to show the role Workflow Management Systems (WfMSs) have in supporting Performance Management for teleworking. In telework research, as well as practice, there is a long-standing debate on the most appropriate approaches to managing teleworkers. Traditional, supervision-based methods are generally considered to be inappropriate, because of the distance between manager and worker. Methods that overcome this organisational dispersion are, for example, output-based systems, coaching, autonomy (also labelled 'self-control') and peer control (see for example [1], [2]). Performance management (PM) could be another potentially useful approach, because it doesn't rely on direct supervision, and provides instruments for goal-setting, monitoring and feedback. Performance management (PM) refers to the assessment of progress (at different organisational levels) toward achieving predetermined goals, as well as communication and action in response to actual progress [3]. PM has featured in some studies on telework (e.g. [4], [5]), mostly looking at performance *improvements* gained from telework however, and less so the management of the performance of teleworkers.

More importantly, what is missing from literature is an acknowledgement that the projected performance improvements will only be achievable if management actively strives to accomplish these – in other words; if performance is managed with the anticipated improvements amongst the targets.

Information Technology (IT) is also considered to be instrumental in dealing with the distance between manager and teleworkers. Dimitrova, however, found no evidence for more use of technology for control when organisations introduced teleworking [6]. Despite this, a specific type of IT, Workflow Management Systems, has been found to be especially useful in remote management independent of the actual management approach [7]. This makes it an interesting technology to consider for supporting PM for teleworking. Figure 1 below provides a graphical overview of the relationships between the three concepts that we study in this paper.

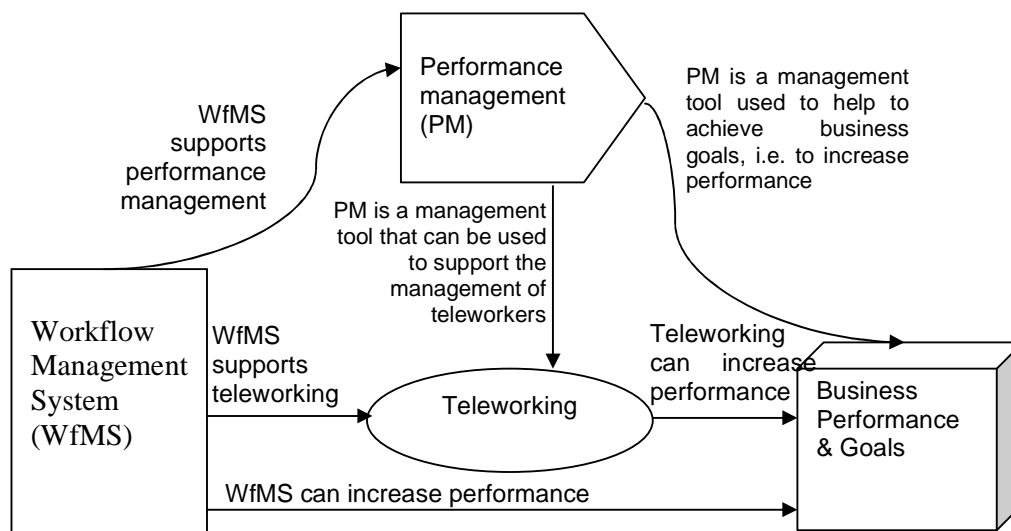


Figure 1: Relationships between the concepts of Performance Management, Teleworking and Workflow Management Systems

We will start this paper with a brief outline of our perspective on teleworking, followed by an introduction of key features of performance management, and an analysis of the potential contribution of PM to teleworking. We will then go on to explain the ‘essence’ and main capabilities of Workflow Management Systems and how such systems can support teleworking. Finally, we will bring these lines of enquiry together, to investigate how WfMSs support PM for teleworking. Throughout the paper, we will use secondary data and anecdotal material for illustration. In the final section will present a UK local government case study, to demonstrate the links between Workflow Management Systems, Performance Management and teleworking.

## 2 An introduction to telework and performance management

### 2.1 Telework

With the inception of so-called office automation systems in the 1970s, the recognition grew that new Information Systems would open up the possibility for ‘distance work’ (see [8]) – with workers operating remotely from their supervisors, team members and even customers. Since then there has been an ongoing debate on the essence and importance of remote work. Under such names as ‘telecommuting’ (e.g. [9]), ‘telework’ (the more European term), ‘e-work’ and virtual teams and organisations, this phenomenon has been

subjected to substantial attention for some time. The most relevant types of remote work are currently those listed in table 1.

Table 1: Different types of remote working

Type of work	Description
Homework	Worker works in private home, using ICT to connect to the organisation; usually combined with working in office (examples: clerical workers, consultants)
Mobile work	Worker uses mobile technology (laptop, mobile phone, wireless network) to be able to connect to the organisation from any location, either when travelling or when at client's location (examples: sales representatives, technical service people). Office is visited less frequently.
Call centre	Call centre employees can work from any location; they can be physically separated from the organisation in their entirety (potentially off-shore, where call centres are moved to low-wage countries), and/or individual call centre employees can be home-based or based in (rural) telework offices.
Virtual Teams	Temporary teams (for example in software development) of experts from several locations are brought together to realise a pre-defined outcome that requires a set of expertises that is difficult to find in one location. Team members may never actually meet in the course of the project.

## 2.2 Performance management

Performance management (PM) refers to the assessment of progress, at different organisational levels, toward achieving predetermined goals, as well as communication and action in response to actual progress [3]. PM looks at performance from a variety of angles, the most common being:

- The *effectiveness* of any activity: whether wider goals are being achieved. In the context of teleworking, this raises questions around contribution of telework implementation to organisational goals, such as improved customer flexibility and employee retention.
- Matters of *economy*: whether value for money is being delivered from the inputs used. For teleworking, economy can for example be reflected in improvement of the use of human resources (less time wasted travelling or chasing documents) and buildings (desk sharing, touch down desks).
- Issues of *efficiency*: have resources been used productively to create quality outputs. Several studies have shown that teleworking can improve overall outputs, accuracy and service quality.

These aspects of performance are illustrated with figure 2, linking it to a process approach to work.

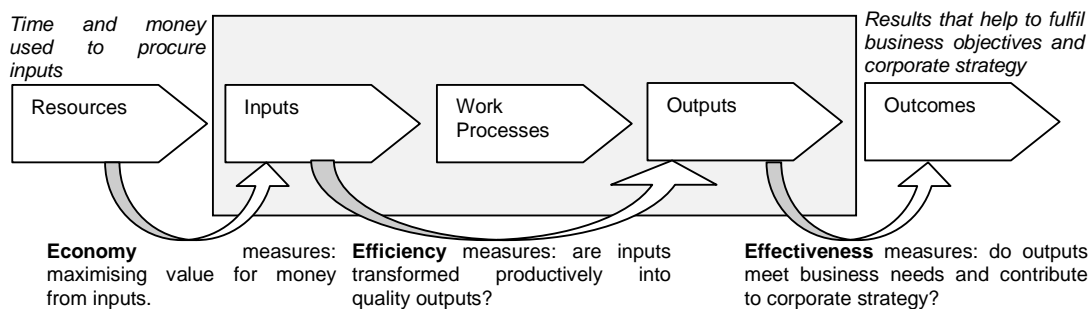


Figure 2 A generic performance framework

It is essential to realise that processes in organisations are in themselves collections of sub-processes feeding into each other. In other words, one process's outputs may well be another process's inputs. Also, processes *share* resources and the overall outcomes reflect *emergent properties* of the collective (system), not a simple adding up of outputs of individual processes.

### 2.3 Performance Management in a strategic perspective

It is essential to recognise that PM is not merely a tool for operational management. On the contrary, it is, at its best, an overall, integrative approach, linking operational activities to strategic outcomes.

At a **strategic** management level PM involves:

- Business goal setting (includes using historic data to analyse previous performance, forecasting, sensitivity analysis, scenarios, etc.)
- Determination of Key Performance Indicators (KPIs) for the business goals
- Goal evaluation, using KPIs (possibly in the form of 'dashboards', that can show actual performance on KPIs in real time).

At the **tactical** management level PM involves the translation of business goals and KPIs into resources such as money, technology and people (e.g. number, skills, training), structures and business processes. Deviations from targets can lead to changes in each of these, i.e. retraining of personnel, rethinking budgets or changes in business processes.

For **operational management** PM involves: determination of individual output requirements, task distribution, monitoring, control, coordination, etc. All of this is done using KPIs and Business goals as guidelines to produce more detailed performance indicators, and monitor contributions to the KPIs.

At an **operational** level, i.e. for employees and teams, PM is reflected in individual and team output requirements. These will often be given by a manager, but more autonomous workers and teams could base their own targets directly on the KPIs, without an operational manager's directions.

### 2.4 Balanced Score Card

A key tool in performance management is the well-known 'Balanced Score Card' [10]. This is used not just in *measuring* performance, but it extends to being a strategic planning and management tool. Traditionally, the balanced score card (BSC) looks at performance from four perspectives, with KPIs being linked to each perspective:

**Financial** Perspective: this measures contributions to the bottom-line performance; KPIs could include such measure as: Cash flow, ROI, Financial Result, Return on capital employed and Return on equity.

**Customer** perspective: this looks at the value proposition to the customer (e.g. quality) and resulting outcomes (e.g. market share); possible KPIs could be: Delivery Performance to Customer - by Date or by Quantity, Customer satisfaction rate, and Customer retention.

**Internal Business Processes perspective;** this focuses on the processes for creation and delivery of the customer value proposition; suggested KPIs for this perspective are: Number of Activities, Opportunity Success Rate, Accident Ratios, and Defect Rates.

**Learning & Growth perspective:** this perspective looks at the intangible assets in the organisation, mainly internal skills and capabilities; related KPIs could include: Investment Rate, Illness rate, Internal Promotions %, Employee Turnover, and Gender/Racial Ratios.

In our analysis, we will use these perspectives to enhance our understanding of contributions of WfMSs to supporting PM in a teleworking context.

### 3 Telework and performance management

There are two main connections between telework and PM, though not many authors seem to be making a clear distinction between them. Firstly, and most obviously, there are numerous studies that show contributions of teleworking to improved organisational performance ('benefits of telework implementation'). Below we will look at some examples of this for each of the BSC perspectives.

But there are also contributions of PM as a management tool to support the success of teleworking itself. In other words, as a tool it helps telework managers and teleworking, which in turn also helps to improve performance. Both perspectives are shown in figure 3.

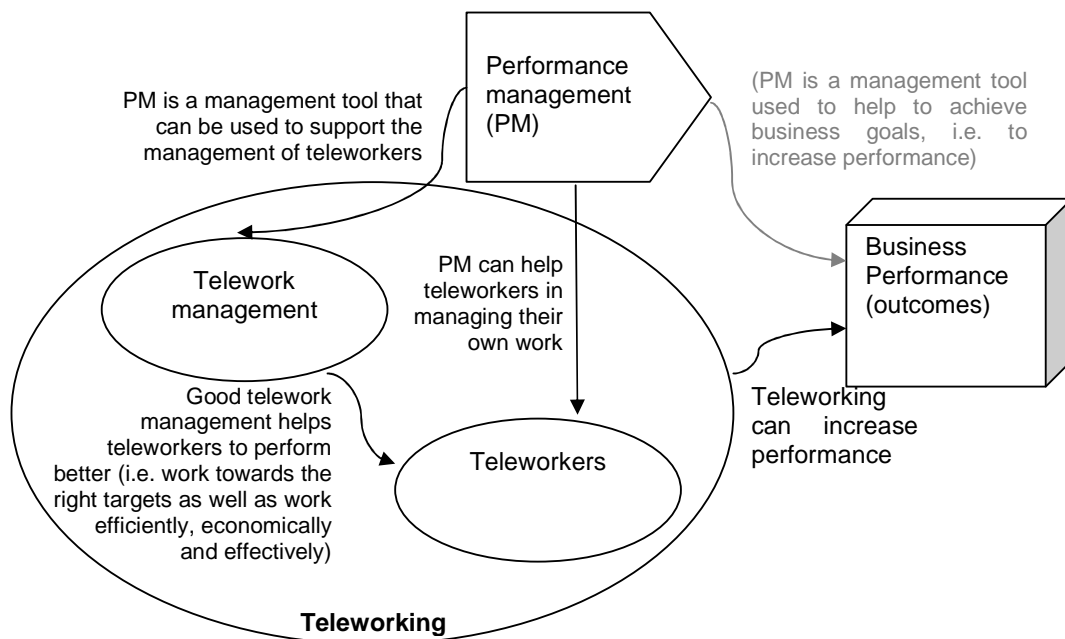


Figure 3 How Performance Management and Teleworking are related

#### 3.1 PM of teleworkers

Over the years, management and control have been at the heart of studies into the success and failure of telework. This is not surprising, since control is also a key area of organisational studies in general, and the traditional control by direct supervision is complicated if workers and managers are physically separated. Traditional methods, such as those used in behaviour control systems, tend to lose their effectiveness when the distance between manager and worker is increased. Managers respond to these changes by either resisting telework or adapting their control methods [11]. This adaptation can go two ways: either there will be more worker autonomy, or managers will introduce more formal,

explicit and stringent supervisory procedures to cope with the physical absence of their employees (see [6]).

Performance management appears to be a particularly interesting approach for managing teleworkers, as it is not in itself concerned with direct supervision, and relies strongly on the use of output targets (based on KPIs and Business Goals). Watad and Will ([4]: 466) found a clear split in managers' evaluation of performance management for teleworkers, with some perceiving it as easy, while others see it as a difficult issue. These authors think this reflects both the relative high percentage of fairly autonomous teleworkers (who will be expected to manage their own performance), as well as the fact that teleworking organisations are more likely to implement explicit performance management policies to support the managers.

Kowalski and Swanson [12] consider the use of a 'results-based performance management system' a critical component of a culture based on trust, which in turn is essential for a healthy teleworking arrangement. This is an interesting perspective on PM for teleworking, linking it to 'softer' benefits of PM, on top of PM's more direct connections with performance improvement and control.

## **3.2 Telework contributions to improved Business Performance**

In this section, we will give a brief overview of potential contributions of teleworking to business performance, as found in literature. We are using the four perspectives from the Balanced Score Card to structure this.

### **3.2.1 *Financial Perspective***

It can sometimes be difficult to prove a direct link between telework implementation and bottom-line improvements, as telework is usually part of wider changes. Contributions to profit can firstly come from cost savings, most importantly on office space and workstations. A SUSTEL case study, for example, found savings of £5,000-£18,000/annum, see [13]). Also, employee turnover can be decreased (e.g. by offering flexible work opportunities to new parents), meaning lower search and training costs. Secondly, outputs can be increased by higher employee performance, less wastage (higher quality of work, less re-work) and enhanced flexibility. Individual performance improvements are among the most reported benefits from teleworking; BT for example, reports a 15-31% productivity improvement for home-based workers. Kurland and Bailey's [11] review of telework research provides a good overview of studies finding performance improvements.

### **3.2.2 *Customer Perspective***

Key contributions from teleworking to the customer-related KPIs are linked to enhanced flexibility and output quality. At IBM Netherlands (see [14]), a key motivator for introducing formal telework arrangements was to increase the time employees spent with customers, rather than in the office or on the road. As such, teleworking was part-and-parcel of a wider strategy of enhancing flexibility. Kurland and Bailey's review finds that teleworkers are better able to relate to customers and other stakeholders, which in turn leads to higher job and business performance [11]. Dispersing employees allows an organisation a 'local presence' for customers that is difficult to achieve with a centrally based organisation.

### **3.2.3 Internal business processes perspective**

This perspective is often pivotal in achieving many of the customer related performance indicators: teleworking and its related technologies allow organisations to work ‘smarter’. This is nicely captured in Friedman et al [15], who discuss how experimenting with the way work is done (including introducing teleworking) allows managers and employees to achieve a better work-life balance, and, in doing this, to improve organisational performance as well as employee motivation. However, in some cases teleworking is seen to complicate internal communication and collaboration (see for example [11]), which could have a negative effect on the internal processes.

### **3.2.4 Learning and Growth perspective**

The learning and growth KPIs are very closely linked to key teleworking advantages: increased employee retention, especially for women with young children; higher employee satisfaction (due to better work/life balance and less commuting); and less sickness absence, because teleworkers can shift and/or limit workdays more easily to accommodate their health and care situation. Such advantages have been found in several telework studies (e.g. [14], [13], etc). Telework may introduce difficulties, however, in achieving synergy and knowledge management, because of less informal communication and potential lack of availability of colleagues for problem solving. On the other hand, introducing supporting technologies in an organisation with an existing dispersed workforce, may actually enhance knowledge sharing and learning: creating a ‘virtual team’, rather than a set of distant individuals. Although much can be achieved using telecommunication technologies, many will argue that there remains a strong role for face-to-face communication.

### **3.2.5 Other perspectives**

Some types of performance improvement are difficult to classify in the BSC perspectives. Environmental considerations (less commuting) have often been at the heart of (government-driven) telework initiatives, but actual improvements seem to be rather under-reported. A study from AT&T [16] is an exception, as this reports in detail about the reduced carbon footprint due to telework implementation. Other reported or suggested ‘societal’ benefits include employment opportunities in rural areas, as well as employment opportunities for less-abled people and young parents.

## **3.3 Integrated perspective on PM for teleworking**

The case for telework as instrumental in achieving important performance improvement seems to be very strong, despite some potential disadvantages. Using PM as a tool to manage teleworkers is equally alluring. However, the key in actually achieving such benefits lies in actively managing the employees and the organisation to achieve the envisaged performance improvements. These improvements will not happen by simply implementing teleworking and just hoping for the benefits to emerge. An integrated PM approach is needed to actually realise performance improvements through telework implementation, including expressing the projected benefits in KPIs and business goals. We will return to this point after having introduced a technology that we consider to be an important instrument in supporting this kind of PM: Workflow Management Systems.

## 4 Workflow management systems

### 4.1 Information Systems in work processes

We consider Information Systems (IS) to be sets of interrelated components (including technology, people, processes and procedures), ‘existing to serve, help or support people taking action in the real world’ ([17]: 10). IS are closely linked to the management and control of work processes. For example, underlying ITs enable collection and storage of data about inputs, (work) processes and outputs (see figure 1). This allows managers to supervise and monitor these processes and the people involved, as well as support decisions about short and long term corrections when appropriate. Moreover, data can be aggregated, collated and analysed for management information. Ongoing data collection and storage creates a lot of objectified and quantifiable information that makes control at a remove in time *possible* [18]. It is essential at this point to realise that none of these capabilities inherently lead to certain behaviours, though they can both limit and enhance the range of potential actions.

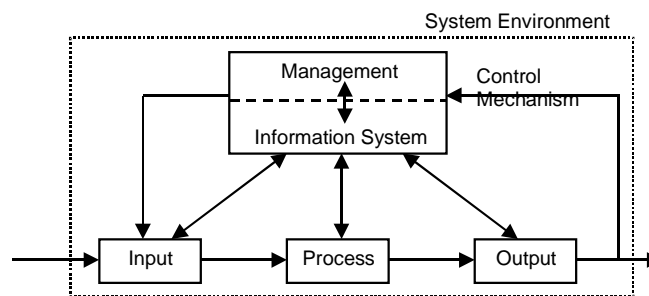


Figure 4 Information System as an organisational control mechanism (Chaffey 2003:40)

While the *Information System* is also used to support *communication*. With reference to Figure 4, this communication involves aspects such as informing employees about targets and constraints (input), providing them with access to information for executing their tasks (process), reporting progress and output to colleagues and managers (output), and delivering/receiving feedback and management information. In the next section, we will look more closely at the capabilities of a specific type of IS, namely Workflow Management Systems (WfMSs). Generally categorised as ‘Office Automation Systems’ [19], WfMSs have a wide practical application, but are not well-researched.

### 4.2 Information systems for Performance Management

Several software houses have created specific software to support (high level) performance management, coining it Business Performance Management (BPM), Enterprise Performance Management (EPM) or Corporate Performance Management (CPO). These systems are intended to support mostly the strategic and tactic levels of PM, providing support to decision makers in formulating performance enhancing strategies as well as in monitoring actual performance. This allows for better, faster feedback, by providing real time analysis of business data in the perspective of KPIs, so problems can be identified and corrective actions can be taken before they become too large

### 4.3 Workflow Management Systems

Workflow Management Systems are not usually linked to Performance Management, but we will argue that they have many capabilities that make them very useful for PM. WfMSs

support the definition, execution, registration and control of business processes [20]. A WfMS takes care of delivering the right piece of work to the right resource at the right time [21]. Through the WfMS, users can often access other types of information technology, such as databases, document management systems and transaction systems. Alternatively, workflow functionality can be embedded in other applications, such as Customer Relationship Management systems (CRM) and Enterprise Resource Planning systems (ERP). Together, these types of systems are often labelled 'Business Process Management Systems', as they share the capacity to enact and manage operational business process (see [22]).

Because a WfMS records all of its actions, it provides both historical data, as well as real-time information about the status quo of business processes. This is not limited to *intraorganisational* workflows, as there is growing interest in supporting *interorganisational*, e-Business workflows as well [23].

People employ different meanings when they talk about the WfMS, which can be captured in three dimensions: (1) workflow 'software tools', which operate as part of a broader (2) workflow 'system' (or technical architecture), to improve the way (3) 'business processes' (or workflows) are organised and managed. See also Van der Aalst and Van Hee [24] for a discussion on the important links between Workflow *management* and Workflow *technology*. Workflow tools enable rules related to business processes to be written into work systems, thus representing the rules or 'logic' of the process. Such tools also allow for greater automation, both of work itself and the transmission of work elements. Grinter [25] captures the workflow functionality in three basic steps:

- 1) *Categorisation*: Reduce the work to be done to a basic form by breaking up work into elements such as activities, documents, and user roles.
- 2) *Formalisation*: Define formal relations between the components of work (business rules).
- 3) *Automation*: Use formalism to automate some aspects of the work entirely.

Steps 1 and 2 above are concerned with the modelling of business processes, for which several modelling languages have been developed. Kettinger et al found 25 business process modelling methodologies, 72 techniques and 102 tools [26]. The modelling process is usually combined with some business process *redesign*, aimed at optimising process flows and coordination, as well as creating more options for automation.

Because WfMS involve the formalisation of business processes, they are mostly associated with simple, well-structured routine work, such as claim processing (see [27]). However, as Grinter for example shows, they can also be very useful in less structured settings, such as software development [25]. Different types of Workflow systems have been developed for different contexts, each achieving a different balance between flexibility (being able to deal with new, unpredictable situations) and supporting standard processes [28].

#### **4.4 Supporting performance management with WfMSs**

The potential contributions of WfMSs to PM have a similar 'duality of purpose' as we showed for teleworking. Firstly, WfMSs can support the *process* of performance management. Figure 5, below, shows the main linkages between PM and WfMSs from this perspective. And secondly, as we will elaborate a little later on, WfMSs can in themselves lead to improved organisational performance.

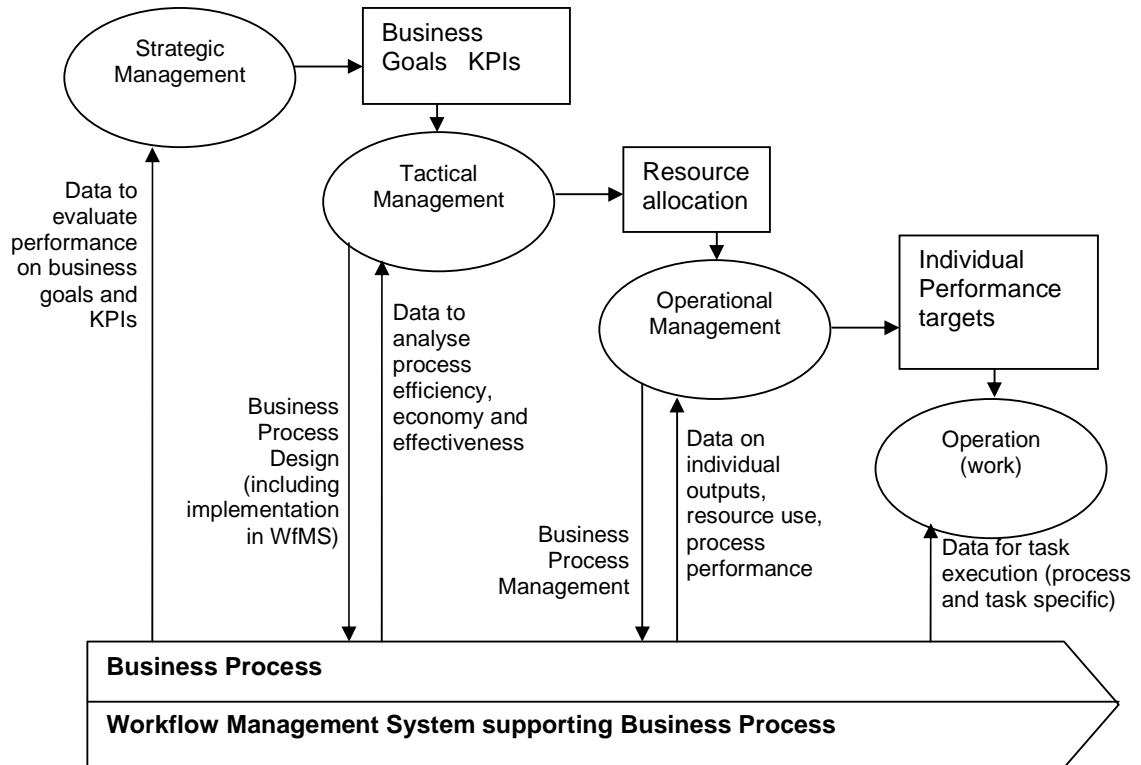


Figure 5 How WfMSs support Performance Management

#### 4.4.1 WfMSs contributions to Managing Performance

Figure 5 shows how all management levels and operations receive data from the WfMS to inform their work and decisions. The downward arrows represent tactical and operational managers manipulating the WfMS, for example to support changes in business processes, or to input individual performance targets. WfMSs are used to *implement tactical* decisions on the best way to achieve the corporate goals and KPIs, and also to *collect data on the actual performance* (especially on the processes). This performance data appears in different ways and at different levels. At an *operational* level, management uses it in the ‘classic’ way to monitor individual outputs as well as resource use and process performance (e.g. the time it takes to respond to a customer request). This information is used continuously to provide feedback on an employee’s performance as well as guidance on how to improve it. *Tactical* management receives data and information that can be used to analyse process performance in terms of efficiency, effectiveness and economy. The KPIs and business goals will be used to evaluate overall performance. This could lead to a re-design of the business processes, which will also mean changes to the WfMS. At the *strategic* level, finally, the information based on the data from the WfMSs informs the evaluation of KPIs and Business Goals. This could partly be done in real-time, typically creating so-called dashboards (Business Intelligence), allowing for fast manoeuvring in response to Performance issues. More typically, this will involve periodic performance reviews. It may also inform predictions of future performance (scenarios and simulations), and the setting of new goals and KPIs.

Clearly, not *all* relevant performance and operational data will be produced by the WfMS, (e.g. sales data, financial data, etc). However, it is the key system for information on the contribution of the business processes to business performance. It also provides operational access to many of these data sources.

Workflow tools can ensure that each item of work gets to the right person, while they also allow monitoring and tracking to check that this has indeed taken place. Also, by using workflow systems, processes necessarily become much more transparent, generating real-time management information, as well as historical data. At a tactical and operational level, this allows for monitoring the progress of particular items, the performance of given processes, work groups and individuals, and enables intervention where needed. When a user logs on to a WfMS, the system (and therefore others using the system, such as managers and colleagues) will 'know' who the users are, for which tasks they are qualified/authorised, and which work groups they are currently assigned to. Additionally, the system will provide a 'work list'. For example, for a 'requisition', it will illustrate the subject of the requisition, when it was sent and when authorisation is due. By clicking on the subject, the details of the requisition can be viewed. The work list is called up by the user, and provides details of jobs to be done, as well as where a given job is in the process.

WfMSs can support performance management in organisations without regard to the actual location of the workers and managers. This is partly achieved by the process redesign underlying its implementation, for example by digitising document management. This means that not only employees receive task instructions from the system; they will also have access to any related documents. While WfMSs have been specifically developed to support workflow in telework (see [29], [30]) and in virtual enterprises and cross-organisational workflows (see for example [31]), such applications of WfMS seem to be rare. Ortner and Stary suggest that, compared to an 'ordinary WfMS', a system for teleworking has to deal with a higher complexity of workflow management and an increased need for flexibility and coordination [30]. Studies into WfMSs supporting remote collaboration, however, generally focus on technical design solutions to overcome traditional WfMSs' difficulty with non-sequential tasks (e.g. [32]). Based on the above, the location of a worker should be inconsequential for a WfMS in the first place, provided they have been well designed and implemented.

#### **4.4.2 WfMSs contributions to improved Business Performance**

On top of their contribution to the *execution* of Performance Management, WfMSs can also contribute to achieving performance *improvements* directly. Such improvements follow to a large extent from the business process redesign that is possible because of the application of workflow management technology. Benefits can cover each of the BSC perspectives, from major financial returns (e.g. ROI), to enhanced customer service (e.g. shorter response times), improved internal processes (obviously at the heart of WfMS benefits) and also learning and growth (for example when repetitive tasks get automated, leading to more rewarding work for managers and employees). Outside of the BSC perspectives, a key advantage of WfMS application lies in an enhanced ability for organisations to prove (process) compliance to external stakeholders.

Additionally, as Reijers et al. [28] point out, WfMSs in themselves deliver the following benefits:

- *Less coordination effort*: the system will do some (or most) of the (routine) coordination that previously had to be done by people.
- *Higher quality*: users of the system will always receive at least the minimum amount of work needed to deliver the required level of quality.
- *Higher efficiency*: the users will receive at most the work that is required to deliver an acceptable result.

- *Higher maintainability*: the business control flows will be taken away from the traditional applications (e.g. ERP) and moved to the WfMS. This makes it easier to adjust the business processes, and their related IS support.

Considering their close link with business processes, it makes sense to return to our figure 2 for a review of potential contributions of WfMSs to performance improvements.

In terms of **economy**, WfMSs provide insights into the use of resources, potentially not just to managers, but also to workers. This can lead to a more economical use of resources, especially if KPIs to this effect have been formulated. Less time will be wasted waiting for tasks and necessary inputs. Potentially, it will also be easier to share resources across business processes, which could be more economical.

As Reijers et al [28] suggest above; **efficiency** can be improved by maximising the use of human resources. Also, the transparency of the work processes to both managers and employees, provide strong tools to monitor processes, and provide feedback where needed. This can be expected to improve the day-to-day process efficiency. In the longer term the data on processes can be used to analyse efficiency. This can lead to suggested process improvements, which can then again be implemented in the WfMSs to achieve the increased efficiency.

**Effectiveness** can be enhanced by a variety of means. With the routine coordination being done by the WfMSs, there is less room for error in work distribution. Quality of outputs is helped by, as Reijers et al [28] state, the fact that users receive at least the minimum amount of work needed to deliver the required level of quality. A worker can, for example, get an overview of all tasks and data relating to a single customer or claim. This also relates to performance targets such as delivering a response to a customer within a certain time period.

## **5 Workflow Management Systems supporting PM for telework**

In this final section, we will bring together the thinking about WfMSs, PM and teleworking, in order to gain a clearer understanding of how these are linked and support each other. We will first present and analyse a case study that shows these linkages. Finally, we will discuss some implications for telework implementation, WfMS development and PM practice.

### **5.1 A Case Example: Supporting neighbourhood teams in a local government organisation**

This case study describes the implementation of a WfMS in the Revenue and Benefits department of a large UK local government organisation. This organisation serves over 150,000 citizens, and has more than 60,000 residential properties and almost 3,000 business premises. The organisation presents a ‘classic’ workflow situation, with highly structured, predictable and repetitive processes. The Revenue and Benefits department offers two main services: the receipt and processing of council tax bills and payments, and the provision of housing and other benefits to council residents. These two services are closely linked at a management level. To enhance customer service, efforts are made to also achieve this at an operational level.

Data on this case study was gathered in 2003 and 2004. During the implementation of the WfMS, one of the authors was involved in quality assurance, learning support and ‘toolkit’

development for the project. This took place within a central government funded initiative intended 'to facilitate the development of enterprise workflow in a local authority context'. Information for this case study was collected:

- By participant observation during the implementation period (which started April 2003 and ran for 12 months),
- In interviews with the project manager and one of the Benefits managers, in which specific attention was paid to the experiences with home working
- Using data from an internal telework evaluation study, which involved 8 participants (all using the WfMS). The study included quantitative performance data and sickness absence rates, and feedback from teleworkers, office workers and managers.

The WfMS was introduced in response to an audit that showed that the department failed to meet performance targets, and was not working as efficiently as it could. The new WfMS was to have two main roles: to automatically distribute incoming tasks to employees in batches, where previously managers would manually distribute the work; and to route a random sample of all processed claims to the appropriate supervisors for a quality check. By automating these flows of work, the average claim processing time went down from 84 days in 2002-03 to 43 days in 2003-04. Additionally, managers can now focus on quality control and process improvements, because their role in the *initiation* of the workflows has been automated.

The WfMS has also allowed the department to form neighbourhood teams. The system automatically distributes the work based on postcodes. This contributed further to faster processing and higher output quality. Incoming documents were batched up during the day, and then scanned and indexed off-site (an outsourced process), and then automatically returned. Each employee is supposed to be able to perform all tasks within the service. Tasks involve such things as checking whether clients have filled in forms correctly, whether all evidence and documentation has been provided, cross-checking with other claims, initiating action to correct the claim if needed, and making a decision on the claim. Following this, the WfMS will automatically generate the appropriate letters.

The organisation already has a policy of providing flexible ways of working, including home working. The WfMS was seen as a contribution to the sort of IT infrastructure needed for the introduction of home working in this department. The key advantage of the WfMS for teleworking is that it ensures that the workflow is instant and two-way, no matter where the employee is. Managers can monitor progress, and an audit trail is always available in the system to identify who has been working on a claim. As and when necessary, additional work can be directed to or taken from the homeworker. Between May 2003 and October 2004 a pilot study was conducted, with very positive outcomes. It showed that the home working trial substantially reduced sick leave, provided employees with a better work/life balance and helped retain experienced staff; four out of seven employees showed an average improved performance in excess of 30%, with one employee even averaging an 84% performance increase when working at home.

## **5.2 Analysis of the case study**

The first strong impression from the case study is how both the WfMS implementation and the telework pilot have led to strong performance improvements. Basically, the WfMS has been implemented in response to a performance review, based on very explicit performance targets (that weren't met originally). In a (local) government context, such targets are often

forced upon an organisation, rather than being the result of strategic positioning. However, the organisation can still choose to respond strategically to such given targets, as has been the case for this organisation. The WfMS has supported major improvements from the Customer perspective of the BSC by achieving a huge reduction in the time it takes to process a claim. At a tactical level, management was convinced of the potential benefits of process improvements, which have been supported and realised by the implementation of the WfMS. These improvements also included a rethinking of organisational structures by forming neighbourhood teams (with the aim of enhancing relationships with the community being served, another Customer benefit) as well as the outsourcing of the scanning and indexing of incoming documents. The WfMS supports the management of teleworkers by distributing the work and forwarding a sample of the work to the managers for additional quality checks. Because there are no physical in/out boxes, this can now easily be done remotely.

The WfMS enables continuous monitoring of outputs to ensure targets are met and no backlogs develop. Each employee is set a target of a number of weighted claim units per day. These targets are agreed and discussed between the team manager and the individual at quarterly 'performance review and development' meetings. If targets are not met, the information from the WfMS is used to help identify whether this is due to a skills problem. If higher standards are achieved, the employee has the option of advancing to the next grade. Here the WfMS is seen to contribute to the Learning and Growth perspective from the BSC, as it supports the development of an appropriate skills-base as well as opportunities for internal promotions. Managers can run reports to see which work items are not processed by the target date, in order to identify areas and individuals that need specific attention, before a substantial backlog is created.

The team supervisors check a percentage of all processed claims, to see whether they have been handled correctly. The WfMS has enabled managers to target specific high-risk areas, for example where there have been changes in legislation or where inexperienced staff are employed. This benefits the overall quality of the output. Individuals can also be shown their performance in comparison to other workers.

The information from the WfMS was also used to measure performance differences between homeworkers and those who worked in the office, in order to provide objective comparative evidence. Because of the WfMS, output monitoring is now independent of the location of the employees, which is very helpful for managing the remote workers.

Employees had their reservations about two aspects of the WfMS: the fact that it 'forced' work to them, and that the supervisors were watching more closely the amount of work done. Management defended the second aspect by stressing that this was done to identify skills' weaknesses, in order to be able to correct those with training, rather than to push the performance level up. That the automation of the workflows by the WfMS allowed home working is considered a very positive effect.

### **5.3 Conclusion**

The case study demonstrates how WfMS supports PM for teleworking. It might give the false impression that WfMSs are mainly useful for supporting PM for very structured work processes. However, it has been demonstrated that WfMSs in themselves are not restricting management styles to classic performance control approaches, as they have capabilities that could support a wide range of management styles (see [7]). Performance Management

should also not be seen as an 'extreme form' of performance control. It helps to provide a strong context for managing teleworkers, but does not prescribe the actual mechanisms for control. With PM in place, teleworkers and their managers are provided with a framework for target setting, monitoring and evaluation. The WfMS helps to implement this framework and supports the processes of monitoring, evaluation and improvement. All of this means that teleworkers' efforts are more likely to contribute to overall business targets, which may include those that are directly linked to telework benefits.

PM is thus a useful framework for managing telework, provided it is not just seen as a tool for operational management, but as an integrated approach. We feel that this is often badly understood in telework literature, which either discusses performance improvements, or managing teleworkers, without explicitly linking both. Workflow management systems are very strong tools for achieving major performance improvements, but also for implementing and supporting PM. Such systems are hence very useful in teleworking, as they will provide both managers and teleworkers with insights in progress and performance, independent of their locations. The full benefit of WfMSs for PM and teleworking will only be achieved, however, if management understands their strong capabilities beyond mere simple process automation and performance control.

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