

Strategies For Improving Productivity Of Knowledge Workers - An Overview

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Knowledge is the awareness and understanding of facts, truths or information gained in the form of experience or learning or through introspection. Two forms of knowledge are there : tacit knowledge and explicit knowledge. Tacit knowledge can be held in a person's mind and explicit knowledge can be held in written documents and procedures. A knowledge worker is anyone who works for a living at the tasks of developing or using knowledge. The basic task in knowledge work is thinking which adds value to work through mental activities. Knowledge workers find and access information from the vast sources of knowledge, uses information to answer questions, solve problems, complete writing assignments, and generate ideas. Knowledge worker's performance can be improved by providing access to relevant information; continuing educational opportunities and a balance between guidance and autonomy. Knowledge worker can use Information Technology (IT) to access, process, store, and disseminate information. IT must be designed to reduce the amount of time knowledge workers spend on information access, management and manipulation. Through mobile and wireless technologies, knowledge workers can make use of previously unproductive time. Through knowledge management an enterprise can push the information to knowledge workers. Web logs are personal publishing tools or networking instruments for knowledge workers. The right combination of e-communication, e-training, e-learning and e-assessment tools can form an environment where knowledge workers can flourish.

Introduction

Improving the Productivity of Knowledge Worker is one of the major challenges for the present day Business World. Unlike the blue collar employees who contribute through their muscle power, Knowledge Workers contribute through thinking. The contribution of the blue collar employees can be monitored by monitoring his presence at the work spot and also by observing that whether he is operating the machine or not, whereas the contribution of Knowledge Worker can not be monitored. It is not possible to observe whether the individual is thinking or not. For thinking there is no boundary; the employee may think at work spot, residence, on the way to office or during morning walk or evening walk or any other time. So by monitoring the presence of the Knowledge Worker his contribution can not be ensured. Only when the outcome of thinking comes out, the contribution of the Knowledge Worker can be seen.

Under the circumstances, the supervision of the Knowledge Workers in the conventional way is not possible. The Knowledge Worker has to be given full autonomy, flexible work timing and the target for achieving the result. The organisations should look for various productivity improvement processes & implement those processes for improving the productivity of Knowledge Worker.

Knowledge

Knowledge is the awareness and understanding of facts, truths or information gained in the form of experience or learning or through introspection (Wikipedia 2006). Knowledge is an appreciation of the possession of interconnected details which, in isolation, are of lesser value. Knowledge is the result of learning (Stuhlman Daniel 2006). Knowledge is the internalization of information, data, and experience. Tacit Knowledge is the personal knowledge resident within the mind, behavior and perceptions of individual members of the organization. Explicit Knowledge is the formal, recorded, or systematic knowledge in the form of scientific formulae, procedures, rules, organizational archives, principles, etc., and can easily be accessed, transmitted, or stored in computer files or hard copy. Knowledge is built up from interaction with the world, and is organised and stored in each individual's mind (The Digital Strategy 2006). It is also stored on an organisational level within the minds of employees and in paper and electronic records. Knowledge can be considered as the distillation of information that has been collected, classified, organized, integrated, abstracted and value added (GEN/TC251, 2006). Knowledge is at a level of abstraction higher than the data, and information on which it is based and can be used to deduce new information and new knowledge. When considering knowledge it is usually in the context of human expertise used in solving problems.

Dorothy Leonard-Barton divided knowledge into three classes - public or scientific knowledge, industry-specific knowledge, and firm-specific knowledge (Alter Allan E 2005). Public knowledge are communicated in professional journals, textbooks, public databases, etc. Industry-specific knowledge is related to the specific industry and is diffused among experts, including suppliers and consultants. Both public and industry-specific knowledge are available to all for a price. Firm-specific knowledge is unique to a particular organisation. They are in both explicit and tacit forms.

Knowledge Work

There are three key features, which differentiate knowledge-work from other forms of conventional work (Shukla Madhukar 2005). Firstly, while all jobs entail a mix of physical, social and mental work, the basic task in knowledge-work is *thinking* - it is mental work, which adds value to work. Unlike the shopfloor operator who performs physical operations, the knowledge worker adds value to work through mental activities. Knowledge-work involves activities such as analysing and solving problems, deriving conclusions, and applying these conclusions to other situations. Naturally, the effectiveness of the knowledge worker would depend on the mental skills and mastery of certain intellectual discipline and expertise (e.g., knowledge of theoretical frameworks, model-building, problem-solving techniques, etc.). This is a key factor, which distinguishes a punch-key operator sitting in front of a PC terminal from a software programmer.

Secondly, the kind of thinking involved in knowledge-work is not a step-by-step linear mental work. Knowledge worker has to be creative and non-linear in his/her thinking

The third distinctive feature of knowledge-work is that it uses knowledge to produce more knowledge. When the software professional uses his/her knowledge of writing codes to increase the efficiency of the programme, he/she is creating new ways of applying knowledge. Thus, knowledge-work is more than mere application of known knowledge; the outcome of knowledge-work is creation of new knowledge.

Knowledge Worker

Knowledge workers are obviously non-manual workers and are usually employed by firms to carry out innovative activities. Knowledge Worker is a member of the organization who uses knowledge to be a more productive worker (Stuhlman Daniel 2006). These workers use all varieties of knowledge in the performance of their regular business activities. Everyone who uses any form of recorded knowledge could be considered a knowledge worker. A knowledge worker is anyone who works for a living at the tasks of developing or using knowledge (Creotec 2006). For example, a knowledge worker might be someone who works at any of the tasks of planning, acquiring, searching, analyzing, organising, storing, programming, distributing, marketing, or otherwise contributing to the transformation and commerce of information and those who work at using the knowledge so produced.

A Knowledge Worker is anyone in the organization who uses their brain at some point during the day to accomplish their tasks (PHRED Glossary 2006). We specifically include shop floor workers whose tacit knowledge is often part of the backbone of the organization. Knowledge Worker is a person who has been schooled to use knowledge, theory, and concept, rather than physical force or manual skill (India Infoline 2006). The man/woman who puts to work what he/she has between his/her ears rather than the drawn of his/her muscles or the skill of his/her hands. Knowledge workers use their intellect to convert their ideas into products, services, or processes (Miller WC 1998). A Knowledge worker creates knowledge, knows how to tap and share it across an organisation, and then reuse this knowledge whenever necessary – and he/she usually works against a deadline like yesterday (Stylusinc 2006). Knowledge worker is a problem solver (Western Management Consultants 2002). He/She is a person who uses intellectual rather than manual skills to earn a living. He/She is an individual who requires a high level of autonomy. He/She is a manipulator of symbols; someone paid for quality of judgement rather than speed of work. He/She is a worker who uses unique processes. He/She is someone who possesses un-codified knowledge which is difficult to duplicate. He/She is a worker who sources between his ears. He/She is someone who uses knowledge and information to add to deeper knowledge and information.

Knowledge Worker Characteristics

Knowledge work is complex, and those who perform it require certain skills and abilities as well as familiarity with actual and theoretical knowledge (Knowledge Workers Forum 2006). These persons must be able to find, access, recall, and apply information, interact well with others, and possess the ability and motivation to acquire and improve these skills. While the importance of one or more of these characteristics may vary from one job to the next, all knowledge workers need the following characteristics :

- a) Possessing factual and theoretical knowledge,
- b) Finding and accessing information,
- c) Ability to apply information,
- d) Communication skills,
- e) Motivation and
- f) Intellectual capabilities.

Possessing Factual and Theoretical Knowledge

Knowledge workers are conversant with specific factual and theoretical information. School teachers possess information regarding specialized subject matter, teaching strategies, and learning theories. The sales representative commands factual knowledge concerning the product he or she sells and theoretical knowledge about how to interest customers in that product. Prospective knowledge workers may need years of formal education to master the information needed to enter a particular field of work. Because knowledge is always being created, this type of employee will be acquiring additional information on a continual basis.

Finding and Accessing Information

At a time when the operations of today's information society depends on knowledge that is continually growing and changing, distribution of information within organizations has become problematic due to the massive amount of information with which employees need to be familiar. Knowledge workers must therefore know how to independently identify and find such material. Such employees need to know which sources provide the information they need and how to use these sources in order to locate information successfully.

Ability to Apply Information

Knowledge workers use information to answer questions, solve problems, complete writing assignments, and generate ideas. Use of analogical reasoning and relevance judgment enables employees to address successfully personal and customer service-related issues. Analogical reasoning is a knowledge-based problem-solving process in which persons apply information from precedents to new situations. Relevance judgment is the process by which individuals decide whether or not a precedent is applicable to the problem at hand. The non-repetitive nature of knowledge workers' jobs makes crucial the ability to apply information to new situations.

Communication Skills

Knowledge work is characterized by close contact with customers, supervisors, subordinates, and team mates. Successful knowledge workers present clearly, in spoken and written word, both factual and theoretical information. These employees listen with understanding and ask for clarification when they do not understand what is being said to them.

Knowledge workers must be able to speak, read, write, and listen in one-on-one and group settings. Emphasis on quality customer service and customization of goods and services to meet individual customer needs and wants brings knowledge workers into close contact with customers. The goals of organizational effectiveness and continual improvement of products, together with the need to continually consider new information in order to accomplish work, require communication between supervisor and supervised and among team mates or colleagues. Knowledge workers possess communications skills that enable them to collaborate with one another for goal-setting, decision-making, and idea generating purposes.

Motivation

The nature of knowledge work requires continual growth, in terms of mastery of information and skill development, on the part of those who do this type of work. Knowledge workers must become and remain interested in finding information, memorizing that information, and applying it to their work. Because new technological developments call on knowledge workers to change continuously the way they accomplish their work, these individuals must maintain a desire to apply their talents toward incorporating new information and new technologies into their work.

Intellectual Capabilities

Knowledge workers must have the intellectual capabilities to acquire the skills discussed above. Such intellectual capacities include those concerned with the understanding, recall, processing and application of specialized information. Persons who perform knowledge work must possess the abilities needed to acquire appropriate communication skills and to learn how to figure out where and how information can be located. Knowledge workers are able to learn how to read and write at post secondary levels and to perform abstract reasoning. They also have the intellectual capacity to understand the value of acquiring and maintaining the knowledge and skills needed to accomplish their work.

Knowledge Worker Productivity Improvement Processes

The following are some of the processes for improving productivity of Knowledge Workers :

- a) E-Learning,
- b) ICT- Enabled Education,
- c) Empowering the Knowledge Worker with Internet Learning,
- d) Information Technology (IT),
- e) Information and communications technology (ICT) & Internet,
- f) Mobile & Wireless ICT,
- g) Integration of IT Related Technologies or Support Groups,
- h) Weblogs,
- i) Knowledge Management (KM) and
- j) Change in Attitude.

E-Learning

E-learning is any learning that utilizes a network – LAN, WAN or internet – for delivery, interaction, or facilitation (Sao Binod Kumar & Suri Gunmala 2005, pp 60-66). This includes distributed learning, distance learning other than pure correspondence, CBT (computer-based training) delivered over a network; and WBT (web-based training). It can be synchronous, asynchronous, instructor-led or computer-based or a combination. E-learning represents the integration of multimedia, instructor-led and real-time training in a collaborative environment. It is a learning experience that builds knowledge, skills and capabilities using real-time web-enabled technologies. It is about bringing learning to people and not people to learning.

E-Learning has been an area of prime focus, and the top management's commitment for the Aditya Birla group to meet the need to broadbase learning, update skills and ensure personal development (Sao Binod Kumar & Suri Gunmala 2005, pp 68-73). This has been fulfilled by the Institute of Management and Learning, 'Gyanodaya'. The objective of Gyanodaya is to target the management cadre. The Aditya Birla Group started an e-learning initiative on November 27, 2002. The need for e-learning at Gyanodaya is to ensure that more and more people in the Aditya Birla group were in a position to learn and upgrade their skills. A typical e-learning module is followed by a post-module assessment, in which scoring 65 percent is essential for completion of the module. One can only enroll in one module at a time and each module is followed by a feedback form, which is mandatory for each participant. The medium for rolling out these programmes is the group-wide intranet Aditya Disha.

ICT- Enabled Education

We must focus on education that provides employable skills to our potential workforce in the next ten years if we have to leverage the multitude of opportunities on hand (Adkoli Anand 2006, pp 44-50). Education is key to our future success. Every child must get access to quality education at an affordable price.

It is imperative that we take advantage of Information Communication Technologies (ICT) to achieve this goal.

The core of the proposed solution is to create a National Learning Repository that should be made available to every school, college and academic institution across India. We must create a process that makes it possible to customize instructional materials to meet specific needs and to deliver the materials in multiple formats across any media-print, TV, CD-ROM or web. Education and training providers can better leverage the educational infrastructure being created today, and more importantly get started on our e-education mission.

Empowering the Knowledge Worker with Internet Learning

Internet learning sets an individual on the path to productivity that benefits an organization in more ways than the mere savings of time and money (Kelly Tom & Nanjiani Nader 2003). The right combination of e-communication, e-training and e-assessment tools can form an environment where knowledge workers flourish. E-communication translates into increased awareness. E-training translates into skills. An advantage of e-learning from an employee's perspective is the opportunity for mastery or self-paced learning.

E-assessment translates into career development. Employees value objective metrics that allow them to demonstrate improvement in their skills. Online examinations, simulations, proctored examinations and certifications are valued by most employees as objective evidence of the knowledge. The empowerment an individual experiences from using productivity tools stimulates risk-taking and entrepreneurship.

Information Technology (IT)

Management facilitates the knowledge worker's job performance by providing access to relevant information; environments that promote this information's desired use, continuing educational opportunities, and a balance between guidance and autonomy (Knowledge Workers Forum 2006). Employers use costly technologies to facilitate access to and manipulation of information. The term information technology refers to computer equipment and programmes used to access, process, store, and disseminate information. Examples of information technologies include word processing, spreadsheet, and electronic mail programmes, and a variety of other software programs designed to process information in specific ways. Information technologies are designed to reduce the amount of time employees spend on information access, management and manipulation and to increase the accuracy of these processes. Information technology is important because it helps make information accessible and manageable in a time when accessibility and manipulation of information are crucial to the world economy.

Information and communications technology (ICT) & Internet

The advancement of Information and communications technology (ICT) and the development of the Internet have enabled people to enhance their potential in knowledge work (Alter Allan E 2005). The Internet has expanded the public and industry-specific knowledge. The Knowledge Worker, through the use of ICT and the Internet, has the information of the whole world at his fingertips. ICT and the Internet have also made information easy-to-access, user-friendly and up-to-date. These have to be the results of information system applications, such as powerful information search engines, good databases and data housing, and data mining. The Internet allows the sharing of information across functional, organisational, national and global boundaries. At the firm level, an adequate digital nervous system will enhance employees potential in their knowledge work activities. The Knowledge Worker needs an ICT-enabled work environment to perform adequately in the knowledge-based economy.

Mobile & Wireless ICT

The emerging mobile and wireless ICT can support the mobile nature of the Knowledge Worker's job (Beru Karin, Hemingway Christopher & Ashurst Colin 2005). These technologies can have considerable impact on working practices, collaboration processes, performance, and productivity. The IT consultants who had adopted a mobile working solution which combined wireless General Packet Radio Service (GPRS) phones, Tablet Personal Computers (PCs), Wireless Local Area Networks (WLANs) in their office buildings, and wireless broadband in their homes achieved considerable personal productivity gains. The personal productivity gains resulted from consultants' ability to make use of previously unproductive time, access corporate information as needed, and communicate via multiple channels regardless of location. The new functionality, particularly of the Tablet PC, afforded the evolution of new working practices by supporting richer social connectivity, more engaging face-to-face interaction, with the technology becoming more a social medium rather than barrier. The emerging mobile and wireless ICT will have a greater impact on productivity due to its ability to support the mobile and collaborative nature of today's Knowledge Workers' job.

A package of mobile technologies can have a significant impact on the personal and collective productivity of a geographically dispersed, mobile team. Personal productivity gains can arise from mobile and wireless technologies that enable Knowledge Workers to communicate in real-time with colleagues and customers via multiple electronic channels regardless of location and the technologies have the flexibility to accommodate a diverse range of personal working styles.

Integration of IT related Technologies or Support Groups

The organizational support for knowledge work is fragmented and comes from a variety of IT organization, human resources, facilities, organisations and so forth (Davenport Tom 2003). One approach is to integrate the various technologies that knowledge workers use.

Another IT-related approach is to integrate the various support groups for knowledge worker technologies. At most large organisations today, there's one group to support messaging technologies, one for knowledge management, one for personal productivity applications and perhaps another for help on wireless communications devices. The different groups mean that IT is unlikely to develop an integrated approach to helping knowledge workers use these tools effectively.

Weblogs

Weblogs are personal "diary-like-format" web sites enabled by ease to use tools and open for every one to read (Lilia Efimova 2004). There is a growing cluster of knowledge weblogs used by professional as personal knowledge repositories, learning journals or networking instruments. Used in this context, weblogs address personal needs of a knowledge worker, but they also create an opportunity for others to benefit from having

emergent ideas and personal notes captured in public spaces instead of private collections (Lilia Efimova 2004). From a research perspective, weblogs provide a fertile ground for exploring what knowledge work is and what helps employees to be productive in knowledge intensive environments. For a company employee weblogs provide a unique opportunity to access usually invisible trails of development and flows of ideas (Lilia Efimova 2005) . This can result in having a better overview of internal expertise and experts, as well in speeding up innovation as a result of earlier cross-fertilisation of ideas.

Knowledge Management (KM)

Knowledge Management (KM) is the process thorough which organisations generate value from their intellectual and knowledge-based assets. It is the practice of harnessing and exploiting intellectual capital to gain competitive advantage and customer commitment through efficiency, innovation and faster and more effective decision-making. Most often, generating valve from such assets involves sharing them among employees, departments and even with other companies in an effort to device best practices.

Intellectual and knowledge-based assets fall into two categories: explicit or tacit. Included among the former are assets such as patents, trademarks, business plans, marketing research and customer lists. Explicit knowledge consists of anything that can be documented, archived and codified, often with the help of IT. Tacit knowledge, or the know-how contained in people's heads, their skills, experience, hard-won insight and intuition, and the trust they have invested and earned in relationships inside and outside of the organisation.

A knowledge worker is an asset that appreciates over time (Sahab S.A. Dr. 2002). An effective KM programme should help a company to foster innovation by encouraging the free flow of ideas and thoughts

Change in Attitude

Making knowledge workers more productive requires change in basic attitude., while making the manual workers more productive only required telling the worker (Drucker P.F. 1999, V.41, # 2, pp 79-94). Furthermore, making knowledge workers more productive requires changes in attitude not only on the part of the individual knowledge worker, but on the part of the whole organization. Drucker identifies six factors that determine knowledge worker productivity as follows:

- (a) Definition of the task,
- (b) Required autonomy of knowledge workers,
- (c) Continuing innovation,
- (d) Continuing learning and continuous teaching,
- (e) Quality of output as signature requirement; Quantity is irrelevant until a quality standard exists and
- (f) Knowledge worker as asset not cost.

Conclusion

By implementing the productivity improvement processes, an organisation can improve the productivity of Knowledge Workers. Knowledge worker's performance and productivity can be improved by providing access to relevant information; environments that promote this information's desired use, continuing educational opportunities, and a balance between guidance and autonomy. Knowledge worker can use Information Technology (IT) to access, process, store, and disseminate information. IT must be designed to reduce the amount of time knowledge workers spend on information access, management and manipulation and to increase the accuracy of these processes. Through mobile and wireless technologies, knowledge workers can make use of previously unproductive time, access corporate information as soon as it is needed, and communicate in real-time with colleagues and customers via multiple electronic channels regardless of location.

Through knowledge management an enterprise gathers, organises, shares and analyses its knowledge in terms of resources, documents, and people skills and can push the information to knowledge workers. Web logs are personal publishing tools, personal knowledge repositories, learning journals or networking instruments for knowledge workers and helps the dissemination of knowledge. The right combination of e-communication, e-training and e-assessment tools can form an environment where knowledge workers can flourish. E-communication translates into increased awareness. E-training translates into skills. E-learning provides opportunity for mastery or self-paced learning. E-assessment translates into career development.

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