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## Knowledge Workers and the Principle of 3S (Self-management, Self-organization, Self-control)

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### Abstract

Knowledge workers are highly regarded by employers for their innovation and creativity. Due to the intangible character of knowledge, managing knowledge workers requires different approaches, tools and methods than managing non-knowledge workers. There is a broadly shared idea that knowledge workers require less autocratic, more autonomous style of management than non-knowledge workers. The article gives the theoretical background of the term knowledge worker and covers the part of the research on knowledge workers dedicated to the autonomy of knowledge workers. The autonomy was examined by the question concerning so called 3S. 3S means self-management, self-organization and self-control. The hypothesis is that knowledge workers prefer more autonomous work and prefer to work on the principle 3S. The article discusses answers of 457 respondents, knowledge workers of different professions. The result of the survey indicates that the shift in managerial styles is happening.

*Keywords:* Knowledge workers, knowledge, management, 3S

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## 1. Introduction

Knowledge workers are often highly regarded by employers for their innovation and creativity, as these are both considered important elements in an organization's ability to survive and prosper in an increasingly competitive and fast-changing environment. In private industry, innovation and creativity are needed to bring new or improved products and services to the market, while there is greater need for public sector employees to be innovative and creative as the government seeks significant improvements and change in the delivery of public services (Brinkley, Fauth, Mahdon and Theodoropoulou, 2009).

Managing knowledge workers requires different approaches, tools and methods than managing non-knowledge workers. As P. Drucker noted, knowledge workers are employees who resist the command-and-control model that business took from the military 100 years ago (Drucker, 1988).

The reason why knowledge workers are resistant to the command-and-control style of management comes from special characters of knowledge work. As managers cannot follow processes of knowledge work (it happens in brains of knowledge workers) they cannot control knowledge worker while working. In case of problems they cannot intervene in time. It may be difficult to identify and support (or at least not inhibit) the most productive moment of a knowledge worker's activity due to the non-linearity of knowledge work. The best ideas may not come up in the office during official working hours. The evaluation of the work of a knowledge worker may also be problematic; the short-term and long-term results of knowledge workers' work often differ.

Some naïve managers do not understand the situation and try to apply old traditional tools on their knowledge workers. This approach may work well in hierarchical cultures, where obedience and subordination is natural. But it totally fails in less hierarchical cultures and in cultures where people developed quiet resistance skills. Anyway, managers who misunderstand the shift in style of work between non-knowledge and knowledge work fight with inefficiencies and unnecessary problems. It is better to accept the fact that our times bring new trends in life and management and adopt the tools we have at our disposal.

The theoretical literature anticipates that knowledge work leads to less directive styles of management and require higher autonomy of knowledge workers (Nevell, 2000, Suff and Reilly, 2005, Drucker, 1988, Kelemen, 2010, Mládková, 2012, Reboul, et al. 1996). Knowledge workers are supposed to be able and willing to decide, manage, organize and control themselves. The first results of the research on knowledge workers and their management (started in the autumn of 2010 and it still continues) show that knowledge workers really value less directive styles of management (Mládková, 2012).

This article covers the part of the research dedicated to the autonomy of knowledge workers. Knowledge workers were asked whether they work on the principle of 3S. 3S means self-management, self-organization and self-control (Veber, 2000). Self-management means being able to set work and personal objectives and develop individual skills and strengths. Self-organization means being able to organize the work and personal tasks to achieve objectives and tasks and self-control means being able to control results of individual's activities and adjust behavior to changes and opportunities (Veber, 2000). There is no autonomy if the knowledge worker cannot work by the 3S principle.

## 2. Literature Review And Hypotheses

### 2.1. Knowledge Work

As Brinkley, Fauth, Mahdon and Theodoropoulou (2009) mention, knowledge work and knowledge workers are terms often used but seldom defined. When knowledge work is defined it is usually by broad measures such by job title or by education level (Brinkley, Fauth, Mahdon, Theodoropoulou, 2009). Some authors (Amar, 2002) think that all knowledge work is intellectual work. Thus, a job that is not intellectual enough will not contribute to knowledge work. Such jobs should not be allowed in a knowledge organization. Amar (2002) argues that knowledge organizations should only have jobs that involve at least 50 per cent of intellectual content (e.g., analysis, decision making, and creativity). In turn, the author suggests that knowledge organizations should do away entirely with traditional manual jobs that require only physical skills (Brinkley, Fauth, Mahdon, Theodoropoulou, 2009). An

opposing viewpoint, for example Allee (2002) states that these days, knowledge work is all work because even manual work requires the worker to have and use a much bigger portion of knowledge than in the past (Mládková, 2012).

Due to its tacit dimension, knowledge is of an intangible character. The intangible character of knowledge leads to specifics of knowledge work. These specifics complicate the management of knowledge work and knowledge workers. Knowledge and not the material element is the major raw material for knowledge work. As opposed to non-knowledge work, the most important part of knowledge work happens in the heads of employees even though the final result of their work has a manual character. It cannot be observed and controlled, and it is not linear. The results of knowledge work may differ from the short and long term perspective, which causes problems with standards, measurement and evaluation. Knowledge work usually requires employees with a much better education in a certain field. Due to the intangible character of knowledge it also requires a person who can work and make decisions independently. The growing importance of knowledge work changes power relations in organizations. Managers used to be the people who had more knowledge, more decision making rights and the right to control their subordinates. When knowledge work is involved, power shifts from managers to subordinates. They have more knowledge and they often understand what they are doing much more than their managers (Mládková, 2012).

## 2.2. Knowledge Workers

The literature offers three basic approaches to the term knowledge workers (Brinkley, Fauth, Mahdon, Theodoropoulou 2009). They are conceptual approaches, data (industry) driven approaches, and job content approaches. Conceptual approaches explain the term knowledge worker from the point of view of employees' importance for an organization, and his style of work with knowledge. Authors who can be classified to conceptual approaches are P. Drucker (1954), J. Vinson (Vinson 2009), G.S. Lowe (2002), T. Davenport (2005), C. Reboul (2006).

Data driven approaches see knowledge workers as all those who work in particular organizations or in particular sectors or institutions. Representatives of this approach are for example K. E. Sveiby (1997), M. Alvesson (2002). Job content approaches see knowledge workers as people who do a certain type of job. This approach can be identified in the works of A. Toffler (1990), R. Reich (1992), A. Kidd (1994), G. E. Nomikos (1989).

As our research is focuses mostly on knowledge work and the management of knowledge workers we decided to base it on the conceptual approach. Knowledge work and knowledge workers are understood in terms as Reboul, et al (2006) summarizes:

- A knowledge worker's main work tool is his brain. Therefore, a company losing a knowledge worker is also a loss of its knowledge capital.
- A knowledge worker uses knowledge at his work – he creates, distributes or applies explicit as well as tacit knowledge.
- A knowledge worker's position requires continuous learning and improving.
- Processing information and data requires creating a high added value on this information.
- The individuals change the job. They go their own way. Two knowledge workers would not do the same job.
- The productivity and quality of their work is hard to measure.
- Knowledge worker manage their days. Their positions require creativity, innovation and problem solving skills. That is why knowledge workers don't like to be told how to do things (Reboul, et al, 2006).

In the context of upper approaches and Reboul, et al (2006) summarization, non-knowledge workers are understood as people whose work does not employ high portion or highly specialized tacit knowledge. Non-knowledge workers also work with knowledge but this knowledge is widely available or easy to learn. Due to the lack of specialized knowledge, broader view or lack of decision making skills these people are not classified as knowledge workers. We would like to stress that the term knowledge worker is not exact and objective. Different organizations and different cultures may classify their employees to knowledge and non-knowledge group differently. We also understand that one person may be and may not be a knowledge worker depending on situation. As for the 3S, no comparison between knowledge and non-knowledge workers was done due to the fact that non-knowledge workers are not usually given the right to behave independently in our organizations.

### 2.3. Management of Knowledge Workers

Literature provides some but not many ideas on how to manage knowledge workers (Drucker 1954, Newell 2000, Harman, Brelade 2000, Roffey Park Institute 2000, Suff, Reilly 2005, Buckingham, Coffman 2005, Kelemen et al 2010, Mládková 2012). Many of the mentioned authors examine the management of knowledge workers from the point of view of the HR field; many ideas on knowledge workers are perceived as generally true but not the subject of research (the importance of tacit knowledge for knowledge workers, specifics concerning decision making, style of management addressing knowledge workers' needs, etc.) and the literature review showed that there is lot of space for future research in this field.

### 2.4. Development of Hypotheses

Knowledge is the major raw material for knowledge work. Due to its tacit dimension, knowledge is of an intangible character. As opposed to non-knowledge work, the most important part of knowledge work happens in the heads of employees even though the final result of their work has a manual character. It cannot be observed and controlled, and it is not linear. Managers cannot follow processes of knowledge work and control knowledge worker. This leads to bigger independence of knowledge workers. To be able to work independently and autonomously, knowledge workers are required to self-manage, self-organize, self-control. E.g. they must be able to work on the 3S principle.

*H1: Knowledge workers work on the principle 3S (self-management, self-organization, self-control).*

## 3. Methodology

### 3.1. Research Goal

In this survey we aim to prove or disprove the hypothesis that knowledge workers work independently and autonomously on the principle 3S (self-management, self-organization, self-control). Independent and autonomous work reflects the specifics of knowledge work caused by intangibility of knowledge.

### 3.2. Sample and Data Collection

The research on knowledge workers and their management started in autumn 2010 and it still continues. The objective of the research is to verify some aspects of knowledge work and the management of knowledge workers. Respondents of the research are a combination of distant students of the University of Economics, Prague, the Police University of the Czech Republic and the Armed Forces Academy, Liptovský Mikuláš, Slovakia. We decided on them because many of them work in knowledge intensive jobs. The professions of respondents are different. Respondents interviewed at the University of Economics, Prague work mostly in business and finance; respondents of the Police University of the Czech Republic work in security services as policemen, fireman, soldiers and in public administration, majority of respondents from the Armed Forces Academy, Liptovský Mikuláš, Slovakia were soldiers. The survey on 3S covers answers of 457 respondents. As the majority of respondents turn out to be soldiers and policemen, we decided to classify respondents to four groups: soldiers, policemen, different profession (this group covers respondents of various professions different from soldier and policemen) and the group of respondent who did not specify their job.

As for data collection the research consists of theoretical research (review of the literature) and empirical research. The methodology used for the review of the literature was as usual for this type of theoretical research. We collected described and evaluated different approaches and different ideas on knowledge workers and their management and other related topics. The data used are secondary data collected from traditional and electronic media. The article pays attention to both historical approaches and the latest approaches in the field. Methods used for the review of the literature include typical methods of theoretical work, e.g., methods that allow interlinking separated pieces of knowledge like analysis and synthesis, comparison, induction, deduction, abstraction, generalization and critical thinking. The theoretical part of the article offers different options on how to understand knowledge workers and their management.

As for the methodology of the empiric research, the research is a quantitative research and is based on a questionnaire. The questionnaire provides answers to important questions concerning knowledge workers. It helps us to separate respondents who are non-knowledge workers from respondents who are knowledge workers, gives answers on the role of tacit knowledge in knowledge work and on how knowledge workers develop their knowledge (this part is not addressed by this article). It also helps us to identify important aspects of the management of knowledge workers. Questions are constructed as closed questions. Respondents complete the questionnaire without the supervision of researchers. Questions were constructed so that they did not indicate what may be a “correct answer”.

### 3.3. Analyses and Results

The survey on 3S covers answers of 457 respondents. If the summation of responses is not equal to 457 or 100%, it means that respondents decided on more answers to one question (it was possible) or did not answer the question at all. In table 1 percentages are calculated to the number of respondents (457) and rounded off. In table 2 percentages are calculated to the number of respondents in the group and to total number of respondents (457) and rounded off. The article does not provide any statistical analysis due to the way the questionnaire was constructed; it has no relevant meaning.

Table 1. Characteristics of Respondents

		Number of Answers	%
Age	Under and 25	77	17
	26-45	348	76
	46-65	22	5
	66-75	0	0
	76 and older	0	0
Sex	Female	118	26
	Male	333	73
Education	Only primary	0	0
	Vocational	5	1
	Secondary	265	58
	University	182	40
	Scientific title	1	0
	Pedagogical title	0	0
Profession	Policemen	209	46
	Soldiers	51	11
	Different professions	118	26
	Profession not specified	79	17

The characteristic of our respondents corresponds with the character of the chosen sample. 76% of our respondents applied to the age category 26 to 45 years, 17% of respondents were younger than 26 years, only 5% of respondents belonged to the age category 46 to 65 years. No one was older. 73% of our respondents were men, 26% women. Majority, full 58% of respondents were people with finished secondary education; 40% of respondents already had university degree, usually the bachelor level. As for the profession, 46% of our respondents were policemen, 26% were people of different professions (professions in finances, managers, public administration, etc.), 11% were soldiers and 17% of respondents did not specify their profession.

The autonomy of interviewed knowledge workers was examined by the question concerning 3S. The total results show that 39% of respondents work on 3S principle and 51% of respondents work sometimes on 3S principles. Only 11% of respondents reported that they do not work on 3S. Soldiers were surprisingly the group that gets the highest score for 3S e.g. independent work. 45% of soldiers work on 3S principle, 47% of soldiers work on 3S principle sometimes, only 8% of soldiers reported that they do not work on 3S principle. The results of the group that did not specify the profession were similar. 44% of respondents work on 3S principle, 47% of respondents work on 3S principle sometimes and 11% of respondents do not work on 3S principle at all. Other 2 groups of respondents, policemen and people of different professions also answered the question on 3S similarly. As for the policemen, 38% of respondents work on 3S principles, 56% of respondents work on 3S principles sometimes and 11% of respondents do not work on 3S principles. 34% of knowledge workers of different professions that policemen and soldiers work on 3S principles, 55% of them work on 3S principles sometimes and 12% of respondents do not work on 3S principles.

Table 2. 3S in the Work of Knowledge Workers

	I work on the 3S principle	Number	%
Policemen (209 respondents)	Yes	80	38
	No	22	11
	Sometimes	117	56
Soldiers (51 respondents)	Yes	23	45
	No	4	8
	Sometimes	24	47
Different professions (118 respondents)	Yes	40	34
	No	14	12
	Sometimes	65	55
Profession not specified (79 respondents)	Yes	35	44
	No	9	11
	Sometimes	37	47
Total (457 respondents)	Yes	178	39
	No	49	11
	Sometimes	233	51

The survey shows that minimum of interviewed knowledge workers do not work on the 3S principle. It indicates that majority of knowledge workers are prepared to self-manage, self-organize and self-control themselves. As these roles were traditionally the roles of managers, the survey indicates the shift in the style of management and the power relation between the manager and knowledge worker.

#### 4. Conclusion

Knowledge workers are employees whose major tool and resource is knowledge. Due to the tacit dimension knowledge is of intangible character which complicates the management of knowledge workers and is the reason why knowledge workers are resistant to the command-and-control style of management. As managers cannot follow processes of knowledge work (it happens in brains of knowledge workers) they cannot control knowledge worker while working. It may be difficult to identify and support (or at least not inhibit) the most productive moment of a knowledge worker's activity, and to control it.

Some managers misunderstand the shift in style of work between non-knowledge and knowledge work and try to apply old traditional tools on their knowledge workers. This leads to inefficiencies and unnecessary problems. The theoretical literature anticipates that knowledge work leads to less directive styles of management and require higher autonomy of knowledge workers (Nevell, 2000, Suff and Reilly, 2005, Drucker, 1988, Kelemen, 2010, Mládková,

2012, Reboul, et al. 1996). Knowledge workers are supposed to be able and willing to decide, manage, organize and control themselves.

The part of our research dedicated to knowledge workers covers the topic of the autonomy of knowledge workers. Knowledge workers were asked whether they work on the principle of 3S (self-management, self-organization and self-control). The results of our survey on 3S show that the hypothesis that interviewed knowledge workers work on the principle 3S is true. The total results show that 39% of respondents work on 3S principle all the time, and 51% of respondents work on 3S principles sometimes. Only 11% of respondents reported that they do not work on 3S at all. The survey confirms our hypothesis. To our surprise, the group that reported the highest score for 3S e.g. independent work was the group of soldiers. Even though the results of this group are not representative due to low number of respondents, it is interesting that 45% of interviewed soldiers work on 3S principle all the time, 47% of soldiers work on 3S principle sometimes, and only 8% of soldiers reported that they do not work on 3S principle at all. It indicates that the specifics of knowledge work alter the style of management even in traditionally hierarchical structures. The topic of the research concerns very volatile environment of human relations. In this environment many subjective forces have importance and great influence. Under such conditions, statistics analysis would be biased.

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