

Knowledge economy and the impact of autonomy on innovation in progressive companies

Economia do conhecimento e do impacto da autonomia de inovação em empresas progressistas

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Abstract: The main object is to discuss how the knowledge economy, as a concept and discipline, can open new possibilities for innovation around business development, strategy, management and leadership. Two questions are raised: What is the innovative impact of knowledge economy on budgeting in companies? What can we learn from co-workers' experiences in the Norwegian oil company Statoil when it comes to autonomy in strategic goal setting and innovation? Teamwork and leadership based on principles in Beyond Budgeting appear to mitigate or eradicate some of the role conflicts between employer and employee. Statoil has introduced new principles of corporate management where the traditional budget is replaced with strategy focused policy documents prepared by the employees in team, supported by periodical economical prognoses. According to Statoil, by involving an entire organization in processes related to strategy and resource allocation, knowledge is applied innovatively.

Keywords: Knowledge economy; Strategy; Management models; Innovation; Beyond budgeting.

Resumo: O objeto principal é discutir como a economia do conhecimento, como conceito e disciplina, pode abrir novas possibilidades de inovação em torno de desenvolvimento de negócios, estratégia, gestão e liderança. Duas questões são levantadas: Qual é o impacto inovador da economia do conhecimento sobre o orçamento nas empresas? O que podemos aprender com as experiências dos colegas de trabalho na empresa petrolífera norueguesa Statoil quando se trata de autonomia na definição de objetivos estratégicos e de inovação? Trabalho em equipe e liderança baseada em princípios de Beyond Budgeting parecem atenuar ou erradicar alguns dos conflitos entre os papéis do empregador e empregado. A Statoil introduziu novos princípios de gestão corporativa, em que o orçamento tradicional é substituído com estratégia focada em documentos de políticas elaboradas pelos trabalhadores em equipe, apoiados por prognósticos econômicos periódicos. De acordo com a Statoil, envolvendo toda a organização em processos relacionados com a estratégia e alocação de recursos, o conhecimento é aplicado de forma inovadora.

Palavras-chave: Economia do conhecimento; Estratégia; Modelos de gestão; Inovação; Beyond Budgeting.

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Introdução

With the impact of information technology over the last 20 years we have seen a paradigm shift within economics where holistic management tools, with a link between financial resources and non-financial resources, have exceeded the limits of what was previously perceived as being appropriate or possible to do. However, professional budgeting and accounting skills are still in demand in many knowledge companies in our time. The discussions surrounding the budget's strengths and weaknesses and the value of financial management tools, is just as alive today as in the 80s (Bergstrand, J., Bjørnenak, T. and K. Boye, 1999; Jensen, 2003; Christensen, Kaufman and Shih, 2008, Hoff, K.G., 2009).

This is not a satisfactory situation. How can the knowledge economy, as a concept and discipline, open new possibilities for innovation around business development, strategy, management and leadership?

My main targets are to discuss:

1. The innovative impact of knowledge economy on budgeting in companies.
2. The impact of co-workers' autonomy in strategic goal setting and innovation based on experiences of the Norwegian oil company Statoil.

The Scandinavian leadership model is characterized by involvement of employees in management processes. Statoil, from a knowledge perspective, involves its employees in strategy creation and has chosen to replace traditional budgeting with new principles for corporate management. They claim that the new management model contributes to higher strategic achievement and a strengthening of its position as one of the world's premier oil companies (SNF, 2007). Several financial companies are moving in the same direction, adding new expectations for the budgeting process. Beyond Budgeting (Hope and Fraser, 2003), a management philosophy which seems to be the guiding light for both Statoil and more and more other company groups, presupposes that action and resource allocation must be built around strategies and not the opposite, that strategy be according to the budget.

Strategy literature at present is diverse, and the understanding of what strategy is about or what strategy should be is actively debated. In the era of Post Modernism and the Knowledge economy there seems to be a dynamic fundamental understanding that linear causal explanations must be pushed aside by complex models of understanding. Writing this paper I want to point out that the lack of innovation is often caused because the right questions are not asked. It is therefore very interesting to follow Statoil's attempt to move away from the iron cage of the budget economy based on measuring deviation. In the Statoil management philosophy *autonomy* for the employees is one of the basic principles. The main intention is to involve the employees in asking and answering the innovative questions still not asked, but which are basic for further development.

1.1 Traditional Budgeting - A Phenomenon of the Past

Traditional budgeting is about making a numerical statement about income and expense over a future period of 12 months. In most businesses this is still the core of financial management. The budget also aims to show the economic impact of plans for a given budget period, while at the same time acting as an important checking and monitoring tool in the company's financial management (Sending, 2007).

Modern businesses spend a lot of energy in strategic planning and budgeting. There is no lack of either the tools or the consulting services offering to make life easier for those who are responsible for, or are otherwise involved in the processes of obtaining market share. In spite of this we hear and read daily about traditional businesses that are being terminated as a result of conditions that have made it too difficult to continue. Building a company's future on innovation, strategy and skill building alongside a focus on the ordinary course of business, has become both complex and challenging. It is perhaps particularly noticeable that in the attempt to link the budget to strategic action, many people have either given up or feel the budget's strengths and weaknesses in their body.

The cyclic budget perspective based on the calendar year is also based on a control logic. How good is it really to have achieved your budget if the competition has strengthened its market position at the expense of oneself, or that the expertise that is required to produce in future periods has been weakened during the same budget period, or that the budget for costs is based on incorrect assumptions and

perhaps can only be corrected after 12 months? These questions cause one to reflect on situations that may produce dramatic consequences if appropriate measures are not applied at the right time.

An equally central dilemma applies to the vigor of innovative businesses. The consequence of excessive prioritization of *exploitation strategies*, where the purpose is to earn most income for as long as possible through production or sales, can lead to what Larry Greiner (1972) describes as *path dependence*, that “each stage is both the result of the previous phase and cause of the next” (p.41). The development of the enterprise runs through critical phases, where the innovation element, addressed by *exploring strategies*, is essential for continued existence.

The fact that competitive markets are characterized by several competitive elements, and that the network is built across boundaries that we have known in the past, has created a need to have other control indicators than those we traditionally find in the budget. Knowledge-intensive businesses request the ability to control all critical factors, whether they are easily measurable or they are not so easy to quantify. The Balanced Scorecard (Kaplan and Norton, 1992) represented for many people the solution to this challenge. BSC is a management tool that seeks to connect the present to the future by reporting on the development of selected key indicators where market objectives, goals for learning and growth among employees and the goals for work processes must balance with financial goals. The development and debate underway seems to have exceeded the limits of what strategy is all about and what budgeting should be. In particular, new perspectives on the study of strategy and new perspectives on management and leadership have helped to expand the boundaries of economics and as a scientific discipline it emerges today with a far greater breadth and practical utility than for 20-30 years ago. Business economics and knowledge economy, for instance, have become new disciplines in the link between economics, organizational theory, strategy, psychology and information technology (Knudsen, 2008).

1.2 Innovation-based Development of Knowledge

The knowledge economy represents a paradigm shift that is being used to describe the changes in society linked to the increasing use of ICT and highly educated labor, the emergence of new knowledge-intensive industries as well as technology and productivity effects in the economy (Cooke, 2002). With the glasses of the knowledge economy we prefer to ask more and different questions than we have done previously. The contributions of computer technology have among other things meant that today we can choose from advanced tools for process-management, monitoring and control. The paradigm shift is also characterized by the fact that we have gone from a period of time where it has been sufficient to know *about* and measure factual knowledge, or to know *how* and measure the experienced knowledge, to wanting to know *why* in order to measure what we do not yet necessarily know the answer to. To bring this more sedentary organizational knowledge to the surface is about more than knowledge sharing. Knowledge has innovative meaning only when it is invested in strategic competence to achieve new goals and strengthen the company's competitiveness.

The generation of strategic knowledge is not necessarily easy to express in measurable sizes. The traditional budget has consequently focused on measurable effects rather than strategic input. Hans Siggaard Jensen, professor in the theory of

knowledge at Århus University in Denmark, explains knowledge by describing the relationship between skills, qualifications and competences hierarchically (Jensen, 2010). *Skills* represent the lowest level. With regard to a budget, the production calculation is easy to create as long as we focus on known costs and marginal considerations. *Qualifications* according to Jensen are socially organized skills where concepts and terms are rooted in knowledge and involved professionalism. Qualifications are very important for the building up of identity and professionalism. The traditional budget reflects neither the organization's knowledge level nor potential in the skill level of the organization. Without focusing on skills in practice, either the accuracy of the budget will be small, or the potential for production will not be achieved. *Competence* addresses how we can apply skills and qualifications. Jensen calls this *second order qualifications*, where judgment determines which qualifications are needed. Jensen points out that it is in this segment of knowledge application that the basis for innovation can be found.

Innovative enterprises need to be aware of their potential and the challenges associated with tacit knowledge (Jensen, 2010). Applying *meta knowledge* innovatively, according to Jensen, leads in practice to increase awareness about *what we know* and *what we do not know*.

Not knowing what we do not know marks the limit of our knowledge, *while not knowing what we know* possibly represents our greatest challenge. The accuracy of the budget is strongly linked to the experience-based knowledge, namely *what we know we can do* and *what we know we cannot do*. The possibilities and limitations can be directly linked to *what we can do, but not know that we can, what we cannot do but know that we cannot* and *what we cannot do, but do not know that we cannot do it*. Here too the final form is a limit to our development and the third form, a problem. Jensen describes this as the difference in relation to the concept "qualifications".

The innovation and development potential of the enterprise will be related to its ability to develop new knowledge within the last 3 forms. The silent part of our competencies is linked to our situation with the knowledge we have, but do not know we have, and to what we can do but do not know that we can do. "*Only through a socially organized process of reflection can this be changed*" (ibid p.5).

It has become customary to describe the ratio between the collective production capital and the recorded asset values in knowledge businesses as 70:30. Some would argue that it is fast moving towards 80:20. The main thing that can be drawn from the description is that an exclusive focus on numerical budgeting will most likely contribute to a too narrow strategic focus and that innovative strategies are in danger of not receiving a high enough priority. But, can a numbers based budget reflect innovative strategies based on discretionary considerations or assumptions that we do not yet know the answer to? It is in this area that Statoil claims to be breaking new ground. I have used Jensen's argument here as both a justification for why the traditional budget is no longer enough, and at the same time as a visualization of what opportunities lie in developing an innovation- and strategy-focused budget.

Statoil is creating new ways to optimize the development and application of knowledge capital in preparation for reaching even higher profitability. In an evolutionary theoretical perspective, this can be explained by the fact that a configuration change occurs due to an increase which creates a tension, which cannot be handled within the existing configuration. Larry Greiner calls this "from quantity

to quality", where explorative strategies that contribute to growth relieve exploitive strategies based on profit maximization (Knudsen, 2008).

2. Beyond Budgeting. Management for Innovation

Kaplan and Norton's introduction of BMS (1992, 1996) and Strategic Maps (2000) have made a significant contribution to the development of the control oriented (management oriented) perspectives within the organization discipline over the last 10-20 years. While management literature is largely interested in management models and management tools, the leadership enthusiasts often come with a stronger and slightly different view on the role and importance of human capital. Statoil, when introducing Beyond Budgeting as a management philosophy, wanted to combine both perspectives, even the management and leadership into a new governance model.

A few years ago Statoil took the major steps to change its budgeting practices from traditional twelve month planning cycles to what they describe as *continuous activity based resource management* (SNF, 2007). There were several reasons for this. They had experienced not only that traditional budgeting logic poorly suited the dynamic reality of our time, but that the problems were often reinforced through the integrated management systems and leadership practice. According to a senior adviser in Statoil Hydro, Bjarte Bogsnes, (Bogsnes 2009) one of the most entrenched myths within financial management is that costs can only be held in check by controlling for cost budgets. This cost focus moves attention from the most important thing, namely what and how revenues are generated.

Beyond Budgeting advocates collective management and governing principles which aim to create a better link between strategy and action, ensuring in turn better strategic goal achievement (Hope and Fraser, 2003). In most owner-managed organizations the strategic signals are top-down. With Beyond Budgeting, such signals are anchored in strategy relevant knowledge mediated through interaction with the rest of the organization. Therefore the responsibility for setting goals planning is placed on those who create the revenue. The ambitions and priorities in turn govern how the resources are allocated. The role of the finance department under such conditions is to provide sequential governing information which is relevant to the achievement of ambitious goals. Any recompense will be an issue that is decided afterwards. Employees from the finance department are included in the production or sales team and have a committed ownership for the goal setting processes.

Statoil's starting point in moving away from traditional budgeting was based on what was felt as a lack of confidence in the budget's ability to reconcile the necessary functions to *set goals*, express *expected projections* and *allocate resources*. Statoil's financial management believes that the solution to this reciprocal conflict was to divide the traditional budget process into three separate administrative processes (SNF, 2007). While goal development occurred previously in conjunction with the budget process, it is now run as two separate processes: goal development (the way to go) and planning development (how to get there). "*Ambition for action*" is a term on the one-page administration document which more than 500 profit centers now have as a replacement for traditional production or unit budgets, and which is expected to contribute to the overall strategic goal achievement. The calendar year as a budget period has been done away with and the strategic

perspectives cover from 3-5 years. The employees' obligations are linked to the goals and action plans they themselves have drawn up and approved. Feedback via critical performance indicators (KPIs) tell something about how movement and direction relative to the goals are proceeding. Measurements are taken only in the strategically important areas, where cost targets are presented in the form of ratios expressed through resource investment and what is being given in return.

As the team is now the basic element of the organizational model, the focus for evaluation is now moved from individual achievements and over to what and how the team delivers. Traditional bonus schemes have therefore been discontinued in the Statoil system.

It is well known that several of the largest Norwegian banks since 2003 have changed their budgeting practices in the direction of Beyond Budgeting. What seems to be common for innovative financial enterprises is that strategic goal setting has become a process to a much greater extent than planning and that employees are involved in new ways which confer consequences for apportioned responsibility as much as organizing. Mintzberg and McHugh (1985) highlight the significance of "emerging" strategies linked to changes that are constantly taking place in organizational surroundings. In this lies much of the explanation that induced (planned or intentional) strategies often end up as unrealized, and that the budget is often not achieved. The actual strategy, the strategy that eventually is realized, is a result of both planned strategies and new strategies that have been added along the way. Mintzberg and McHugh (1985) describe this as "*strategy as a pattern in a stream of decisions and actions.*"

3. Co-workers' Autonomy in Strategic Goal Setting

As I claimed in Chapter 1 of this paper, knowledge economy as a concept and discipline opens new possibilities for innovation around business development, strategy, management and leadership. Involvement of employees in strategy processes seems to typify Scandinavian and some European businesses that succeed. Statoil has replaced traditional budgeting with new principles for corporate management involving employees in strategy development and targeting.

Research and experience show that factors like educational level, traditions and cultural diversity have a severe impact on how companies are organizing and managing. In that perspective we may expect that involvement of employees will give different outcomes depending on the general and specialized educational level in the company.

In the knowledge economy education, competence and skills are closely related to innovation. In Brazil the poultry industry is a strongly increasing industry. The same situation is present for fish-farming in Norway. Both industries are characterized by the high education level among the managers and leaders, and low among the workers. In a knowledge perspective of innovation it is a reason to claim that poultry in Brazil and fish-farming in Norway still have a great potential for technological innovation and development.

The strategy discipline is concerned with external and internal forces that have the potential to affect materially the company's future. Stanford's Professor Robert A. Burgelman describes strategy as a means to achieve and maintain control over a company's current and future fate. Strategic thinking is to look ahead, and is associated with exploring multiple scenarios, alternatives and choices (Burgelman,

2002). The employees' and teams' mutual clear understanding of autonomy is understood as fundamental to practicing Beyond Budgeting as a management philosophy. Autonomy is written about in the organization literature, for example, by the Austro-German management author Peter Drucker. As early as 1959, Drucker used the term knowledge worker in the book "Landmarks of Tomorrow". He connected knowledge work to autonomy, characterized by individual, free thought and creativity in the workplace. Nonaka (2007) studied the effort of well-known Japanese companies such as Honda, Canon, NEC and Sharp in the early 1990s, and links the success of these businesses to a management philosophy based on idealism and creativity, knowledge sharing and intuition.

Burgelman (2002) and Burgelman and Grove (1996) treat the concept of autonomy in the context of strategic dissonance and explain dissonance as a result of the divergence between induced (top managed) strategies and employees', teams' or cultural strategies. This is often expressed through the company's distinct compensations expressed in terms of the organization's identity and character. Dissonance can also arise through employees' relationship with the management system. Low adaptability and inertia in connection with change processes according to Burgelman, are a result of strategic dissonance and can be compared with asymmetric information between principal and agent. If the result is that the voluntary efforts and idealism are drained, there is also a danger that creativity will fail.

Bard Kuvaas (2009) has considered the concept of autonomy in relation to employees' inner motivation in the workplace. Through his own research he has come up with three human factors that are directly related to inner motivation. These are *independence, competence experience and belonging*. All three factors can be related to learning. Highly motivated employees feel that the managers strengthen their self-awareness. In addition, being competent on the job, and they are encouraged towards independence and development. For many, the experience of autonomy is a result of perceived autonomy, self-development and security through belonging.

How does autonomy come about under changing conditions? Would, for example The Danish Bank, practice autonomy in the same way in all parts of the organization during a financial crisis such as an economic recovery? This is highly unlikely so long as the knowledge capital is such a critical production factor. The Beyond Budgeting movement defines employees' autonomy in relation to the organization's contextual framework expressed through management principles and procedural criteria. Strategic dissonance represents an undesirable situation in which the employee's action strategies do not support what management expects, or has been decided. Conversely, it is likely that employees will argue that with organizational adjustments, cost cutting and down-scaling they will lose autonomy as compared with previously. According to agent theory, only rewards the employee has accepted would help restore balance between management and employees. According to Kuvaas, inner motivation will greatly depend on the experience of continued independence in the job, skills experience and belonging.

Experience from change processes underpins the fact that state -controlled change strategies override strategy processes based on the interaction between managers and employees if the overall strategy is changed. Change preparedness or experience from previous change processes is critical for how change strategies will work (Meyer and Stensaker, 2011). Strategy will basically be a task clearly anchored in management. My understanding of how autonomy is practiced in both Statoil and financial businesses is that it is very important that the framework and general

conditions under which employees must practice autonomy are clearly defined. I choose to call this *contextual autonomy*. This is in many ways what the principles in Beyond Budgeting help to reconcile.

4. Team Organization for Innovation

I have stated that much has changed over the last 10-20 years in terms of the view of the budget's role in corporate management. Economics as a scientific discipline and field of study, its importance and reputation, almost stand or fall on how it can improve its utility in the link to the other disciplines. In Statoil, team organization has been introduced as a permanent organizational structure. Innovation strategy is the most important reason for this. There is nothing new about the fact that team organization can provide a synergy effect greater than the sum of individuals' efforts and results. We find examples of this in Norwegian industry as far back as the 1960s (Thorsrud and Emery, 1970). Autonomy within groups or teams as such is not new within the discipline of organization.

Within the Beyond Budgeting philosophy, autonomy is expressed as the teams' freedom to develop, set targets, organize and implement. Autonomy seen in this way is the need constantly to find more intelligent and efficient ways to perform work processes. As already mentioned, the content of the term is closely limited by the other principles of management and work processes. Expectations about realizing goals in the short term follow the responsibility to contribute to the organization's long-term strategy development and destiny. We see that the concept of autonomy is given content by adding or expecting independence and freedom with responsibility, but this seems to be closely linked to a commitment and expectation for high motivation and achievement, and related to co-workers.

Both in the Statoil group and the financial sector knowledge is primarily with the employees, and the management depends on such knowledge being applied processually. Within the teams, autonomy is closely related to the team's freedom to act creatively and independently. The conceptual content must be understood contextually in relation to a set of other management principles (Hope and Fraser 2003):

- The importance of focusing on the best interests of the customers. A good reputation is only achieved through *satisfied customers*. *Customer relationships are often strongest between customers and employees within the organization. Strategies must therefore be developed on this basis.*
- The organization is supported by a network of *efficient, accountable teams*, not by centralized functions.
- That all employees are enabled to *act and think like a leader*, and not just execute plans. Authority is decentralized and based on trust.
- The necessity for management to be based on a few *clear values, goals and boundaries* in the organization.
- The management principles must be *practiced with transparency*. Open information is necessary to cultivate self-management. It is important that information is not restricted hierarchically, but includes and commits everyone.

The work culture in the teams will, according to Hope and Fraser, be based on flexibility and trust, not command and control. Relative goals are set for continuous

improvement and fixed contracts corresponding to annual budgets should not be negotiated. Success is the result of teamwork, and *rewards are based on relative performance*, not fixed targets. *Planning* should be a continuous and inclusive process, not a one-sided top-down phenomenon. *Control* is based on relative indicators and trends, not on deviations in relation to plans. *Resources* are made available on a basis of need, not through annual budget allocations. *Interaction* is coordinated dynamically, not through annual planning cycles.

Delegated responsibilities, self-management, commitment to strategy, team responsibility and rewards are labels that can be used to illustrate the concept of autonomy under given conditions. These are also terms that we recognize in the description of the knowledge economy, where powers in the organization are released through a form of situation-adapted and loosely-linked organization, where key skills are a critical factor for further development, and where employees have become much stronger key actors in relation to their own role and future than was previously the case.

Strategy is about choices and processes. Leadership is about organizing processes. The belief in rationality and predictability of organizations may easily lead businesses into dead ends and unmanageable situations. Within financial management the budget's primary role is to reflect the external and internal economic factors that affect the strategic goals. These days the strategic horizon for most businesses has been closer than just a few years ago. With this the need to always have the relevant information available to be able to lead even more proactively has increased. The finance department's role is today expected to go further than producing financial reports and report budget variances. Financial management must support the business strategy choices with decision-making and management relevant information about whether the business really is on course towards the strategic objectives (Hoff, 2009). In cross-organized teams, membership from the finance department is a prerequisite.

Concluding remarks

My main targets to discuss have been:

1. The innovative impact of knowledge economy on budgeting in companies.
2. The impact of co-workers' autonomy in strategic goal setting and innovation based on experiences of the Norwegian oil company Statoil.

The strong pace of development that many industries today have to deal with assumes that the strategic focus of enterprises is directed forward and the awareness of reputation, quality, profitability and performance are qualities that characterize the culture. Teamwork and leadership based on principles in *Beyond Budgeting* appear to mitigate or eradicate some of the role conflicts between employer and employee, which critical theory shows will always be present in economic life. *Contextual autonomy*, defined as a form of balanced commitment and independence to make one's own choices within a team, has undoubtedly helped to strengthen the power of the employee in relation to the employer. Some would argue that this is both front and back of the coin when it comes to the knowledge society.

Economics as a science and discipline had long avoided discussing multiple truths, subjectivity, complexity and dynamic processes within organizations. It can therefore be said that the economics profession's development over the past 20-30 years, with information technology's revolutionary influence, has created a paradigm

shift in which the knowledge economy today is emerging as a new and integrated discipline. The influence of new disciplines, particularly from psychology, sociology, and information technology, has also brought the subject of strategy into new courses. While strategy even 10-20 years ago was about planning, strategy today to a far greater degree requires focusing on development and working with strategy as a process.

Statoil has introduced new principles of corporate management where the traditional budget is replaced with strategy focused policy documents prepared by the employees in the team. Employee autonomy is a central principle which is about independence and responsibility when working in teams. I argue that the exercised autonomy in practice will be contextual and in practice limited by the liability associated with the team and work goals. The empowerment dimension also seems to be closely related to the team's freedom in self-organization, competence development and the reward mechanisms related to the team's efforts.

Statoil has based their innovation strategies on Beyond Budgeting, a comprehensive and complex understanding of organization, where management and the teams take a common, organized responsibility for the strategic goals. Great demands are placed on teamwork and leadership at various levels within the organization in order for this to work optimally.

Beyond Budgeting will therefore be important in terms of developing new knowledge within emerging strategies. Organizing for the development and application of meta knowledge innovatively is expected over the next few years to be the most competitive element controlling a knowledge enterprise. For this work Beyond Budgeting appears to be a good contribution.

Involving an entire organization in processes related to strategy and resource allocation requires a different understanding and practice from leadership than is usual in some parts of the world. The democratic management form, also called the Scandinavian model, as Scandinavian leaders often assert, is in many ways a good starting point.

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