Industrial Engineering Letters
ISSN 2224-6096 (Paper) ISSN 2225-0581 (online)
Vol.3, No.9, 2013

Organizational Changes and Management Challenges Induced by New Operational Security Requirements and Trends for Integration of European TSOs

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Abstract

A rapid rate of change characterizes European electricity markets. New government regulations, new products and services, growing renewables, increased competition, technological developments, and an evolving workforce compel Transmission System Operators to undertake changes on a regular basis. Current operational security requirements and trends for integration of some functions of European TSOs might imply significant organizational changes.

In our current paper, we address the key management challenges induced by organizational changes of European TSOs. We join the debate of scholars and industry professionals of change management with a clear need of revisiting some fundamental questions in relation of TSOs and their operational security.

Based on our research, we can conclude that European TSOs should engage in continuous organizational changes to achieve higher performance and coordination among themselves. A key question of decision-makers is how to identify champions who will become local change agents in their organizations. Change agents must be efficient in handling resistance to change.

In a rapidly changing environment, the knowledge that is most useful to TSOs helps them change and perform effectively. To achieve relevance and generate knowledge that is useful for TSOs there is a need for cooperation between academics and industry professionals to fully understand complex problems and contribute to solutions.

Keywords: Organizational changes, change management, knowledge management, TSO, operational security, European electricity market

1. Introduction

The energy market liberalization process in Europe is increasingly focused on electricity market integration and related cross border issues. This signals that the liberalization of national electricity markets is now closer to the long-term objective of a single European energy market. The interface between the national electricity markets requires physical interconnections and technical arrangements, as well as implies significant managerial challenges. The emerging regional electricity markets need to develop appropriate rules to ensure security of supply at the level of the region (Jamasb and Pollitt 2005). Furthermore, this is going to induce organizational changes within European TSOs.

To ensure the Operational Security of the interconnected transmission systems it is essential that a common set of minimum requirements for European Union–wide Operational Security principles is defined for the cross-border cooperation between the TSOs and for utilizing relevant characteristics of the connected DSOs and Significant Grid Users. The Operational Security Network Code will provide the basis for the power system to function with a satisfactory level of security and quality of supply, as well as efficient utilization of infrastructure and resources (ENTSO-E 2013). It will do so by focusing on:

- common operational security principles,
- pan-European operational security,
- coordination of system operation, and

- some important aspects for grid users connected to the transmission grid.

Managerial challenges within the organizations of the changing electricity market, however, are not properly addressed across Europe. For instance, a representative survey among experts and decision-makers in the Swiss electricity sector shows that Switzerland will face insecurity in energy supply if risks are not managed successfully (Wohlfahrtstätter and Boutellier 2010). The same experts identify an insufficient risk management. Research show, that a country like Switzerland, seems to lack a clear and common understanding of the secure energy supply, as well as how to address related management challenges.

Regional integration trends of transmission system operators' functions give an increased focus to the arising management challenges. The Nordic countries are seeking to fully integrate their grids so that they operate under a single management. While a number of vertically integrated utilities elsewhere in Europe are also proposing to create an integrated, independent transmission system operator (MarketWatch 2007).

The Nordic power system is undoubtedly the most integrated in Europe. Through close co-operation, Denmark, Finland, Norway and Sweden have been able to make substantial progress in congestion management, balancing, market coupling and monitoring, which has led to enhanced interconnection capacity and cross border power flows, hence increased security of supply in the region.

Nevertheless, complications have arisen in making the final step towards full TSO integration. Reportedly, Swedish TSO Svenska Kraftnat is hesitant about the move as it sees it as impractical and unrealistic. Svenska Kraftnat believes that complete integration would require NordReg to increase its authority. This could prove arduous, as sovereignty issues would arise when integrating and reconciling conflicting national laws.

A similar move towards TSO integration is being made elsewhere in Europe. In an effort to counter the EU's current proposal to unbundle transmission and distribution assets, a number of vertically integrated European utilities have proposed forming an integrated and independent TSO that would span Belgium, France, Germany, Luxembourg and the Netherlands.

In our current article, we address the key management challenges induced by organizational changes due to operational security requirements and trends for integration of European TSOs. We join the debate of scholars and industry professionals of change management with a clear need of revisiting some fundamental questions in relation of TSOs and their operational security (By, Burnes et al. 2011).

2. European TSOs should engage in continuous organizational changes to achieve higher performance

The move towards an integrated European electricity market implies continuous environmental changes for market players. In spite of this, European TSOs tend to develop silos in their organizations, which often resist the pro-active accommodation to the changes of the external environment.

There is significant evidence that corporations periodically need to shake themselves up, regardless of their competitive landscape. Even if the external environment is not changing in ways that demand a response, the internal environment probably is. The human dynamics within an organization are constantly shifting, and require the organization to change along with them. Over time, informal networks mirror the formal structure, which is how silos develop (Vermeulen, Puranam et al. 2010).

To determine the direction of changes it is essential to get a clear picture of TSOs' current market position and stakeholder expectations. Research show that many senior leaders lack that clarity, primarily because TSOs tend to put too much emphasis on comparing their present selves with their past selves and too often declare victory if they've improved (Raynor and Ahmed 2013).

New directions within TSOs, new organizational changes get people to start forming new networks, making the organization as a whole more creative. It also disrupts all the routines in an organization that collectively stifle innovation and adaptability. Finally, restructuring breaks up the outdated power structures that may be quietly misdirecting TSOs' resource allocation.

To achieve efficient operations, TSOs must reconcile stability, reliability, and exploitation with change, innovation, and exploration. These imperatives and mechanisms that support them are generally seen as

incompatible and mutually exclusive. Research shows, however, an alternative: a duality view in which stability and change are fundamentally interdependent - contradictory but also mutually enabling (Farjoun 2010). Farjoun argues, while Exploitation and Exploration is oppositional, Stability Enabled Change and Change Enabled Stability is complementary (Figure 1.)

Corporate strategic changes could occur in four distinct rhythms, which are classified as either regular or irregular: focused, punctuated, and temporarily switching (Klarner and Raisch 2013). Companies that change regularly outperform those that change irregularly. Regular and sequential balance between change and stability is associated with long-term success.

Unsuccessful transitions almost always founder during at least one of the following phases: generating a sense of urgency, establishing a powerful guiding coalition, developing a vision, communicating the vision clearly and often, removing obstacles, planning for and creating short-term wins, avoiding premature declarations of victory, and embedding changes in the corporate culture. Realizing that change usually takes a long time, can improve the chances of success (Kotter 2007).

Project duration is also an important success factor according to other scholars, as well. There is a consistent correlation between the outcomes of change programs (success versus failure) and four hard factors, which are called DICE (Sirkin, Keenan et al. 2005):

- project duration, particularly the time between project reviews;
- integrity of performance, or the capabilities of project teams;
- the level of commitment of senior executives and staff; and
- the additional effort required of employees directly affected by the change.

The DICE framework is a simple formula for calculating how well a company is implementing, or will be able to implement, its change initiatives.

Since 70 percent of IT-enabled change projects fail, this is another focus area for TSOs. Research demonstrates that one of the major reasons for this is that managers treat IT as an isolated and mechanical tool that is and should be set aside and managed by the IT department. The underlying principle is that once the “IT people” unleash the new technology, change spreads throughout the organization and employees simply and automatically adapt to the new circumstances (Markus 2004).

In short, managers often think that IT will take care of itself once it is implemented. What they tend to forget, however, is that IT is intimately interlinked with the organization and the way people go about their daily work. As a result, successful IT-enabled change implies managing both the IT itself and its social and organizational implications (Iveroth 2010).

3. Carefully selected change agents are able to drive high performance in European TSOs

A rapid rate of change characterizes European electricity markets. New government regulations, new products, growth, increased competition, technological developments, and an evolving workforce compel TSOs to undertake at least moderate change on a regular basis. Yet few major changes are greeted with open arms by employers and employees; they often result in protracted transitions, deadened morale, emotional upheaval, and the costly dedication of managerial time (Kotter and Schlesinger 2008).

European TSOs often employ people with similar educational background and similar track records in their professional careers. Empirical research investigates how organizations’ reliance on employees’ prior educational and employment affiliations for both employment relationships and interorganizational relationships contributes to inertia in organizational networks (Rider 2012). Therefore heterogeneity in education and work history is an important future direction for TSOs to drive changes in both inter and intraorganizational networks.

Nowadays, TSOs are increasingly required to improve their ability to enhance employees' support or acceptance for change initiatives. In studies that have examined the conditions in which employees support organizational change, researchers have focused on various attitudinal constructs that represent employees' attitudes toward organizational change. The constructs, which frequently serve as key variables in these studies, include (Choi 2011):

- readiness for change,
- commitment to change,

- openness to change, and
- cynicism about organizational change.

A key question of decision-makers is how to identify champions who will become local change agents in their organizations. The informal channels of influence on which change agents rely to build coalitions, overcome resistance, and shift attitudes toward new ideas emerge as important engines of change within an organization (Battilana and Casciaro 2012). Change agents can be unaware that their social networks in their organizations may be ill suited to the type of change they wish to introduce.

Predictors of change agents' success emphasize the importance of networks of personal relationships (Battilana and Casciaro 2013):

- Change agents who were central in the organization's informal network had a clear advantage, regardless of their position in the formal hierarchy.
- People who bridged disconnected groups or individuals were more effective at implementing dramatic reforms. The resisters in their networks did not necessarily know one another and so were unlikely to form a coalition. Change agents with cohesive networks, in which all individuals were connected, were better at instituting minor changes. Their contacts rallied around the initiative and helped convince others of its importance.
- Being close to people who were ambivalent about a change was always beneficial. In the end, fence-sitters were reluctant to disappoint a friend. But close relationships with resisters were a double-edged sword: Such ties helped push through minor initiatives, but were a hindrance when attempting major change.

Change agents must be efficient in handling resistance to change. Most current research recommend seeing resistance for what it really is -feedback- and propose five ways for change agents to use that feedback to effect change more productively (Ford and Ford 2009):

1. Boost awareness. In the early stages, if the only way to keep the conversation about change alive is to entertain highly charged discussions, so be it. A complete lack of feedback can sound the death knell for change.
2. Return to purpose. Employees need to know not only what will change, but why the new reality will be better. Don't be shy about offering explanations as directly as possible.
3. Change the change. People who resist change are often the ones most concerned about getting things right. Give them the chance to help you make a good change initiative better.
4. Build participation and engagement. Heed feedback even when it doesn't seem likely to yield objective improvements. The ownership people feel when you adopt their best ideas will pay off in ways you often cannot foresee.
5. Complete the past. A legacy of bad change can inhibit your change effort, even if you had nothing to do with the unfortunate history. Acknowledging -and, if possible, correcting- past change failures is often essential to future success.

Many managers underestimate the variety of reactions to change and their power to influence those responses. Managers should recognize the most common reasons for resistance (Kotter and Schlesinger 2008):

- a desire not to lose something of value,
- a misunderstanding of the change and its complications,
- a belief that the change does not make sense for the organization, and
- a low tolerance for change in general.

Once they have diagnosed which form of resistance they are facing, managers can choose from an array of techniques for overcoming it: education and communication, participation and involvement, facilitation and support, negotiation and agreement, manipulation and co-optation, and both explicit and implicit coercion. In addition, successful strategic choices for change are both internally consistent and fit at least some key situational variables (Kotter and Schlesinger 2008):

- The amount and type of resistance that is anticipated.
- The position of the initiators vis-à-vis the resisters (in terms of power, trust, and so forth).
- The locus of relevant data for designing the change and of needed energy for implementing it.
- The stakes involved (for example, the presence or lack of presence of a crisis, the consequences of resistance and lack of change.)

The task of the change agents is to develop a culture that supports continuous change and drives high performance. The key principles to develop a supportive organizational culture are, as follows (Katzenbach, Steffen et al. 2012):

1. Matching strategy to culture. Culture trumps strategy every time, no matter how brilliant the plan, so the two need to be in alignment.
2. Focusing on a few critical shifts in behavior. Wholesale change is hard; choose a focus wisely.
3. Honoring the strengths of the existing culture. Every culture is the product of good intentions and has strengths.
4. Integrating formal and informal interventions. Don't just implement new rules and processes; identify "influencers" who can bring other employees along.
5. Measuring and monitoring cultural evolution.

Not only internal, but also external stakeholders play an important role in change programs (Ostroff 2006). TSOs should put significant emphasis on addressing external stakeholders' resistance to changes, as well.

4. Conclusion

The major challenge for TSOs today is navigating high levels of turbulence. They operate in dynamic environments, in societies where the aspirations and purposes of various stakeholders change over time. They have access to ever-increasing technological capabilities and information. In a rapidly changing environment, the knowledge that is most useful to TSOs helps them change and perform effectively. (Mohrman and Edward E. Lawler 2012)

Essential knowledge for TSOs includes:

- transmission system operation and network development
- middle- and long-term planning of the European / regional / national power systems
- facilitating the activity of market players in electricity trade

In addition to that, essential knowledge is also:

- Continuous change management that drives high performance
- Selection and management of change agents who are key players in change programs and overcoming resistance to change
- Identifying, managing and sharing essential knowledge across different departments and divisions, but also across countries and regions

As regional electricity markets emerge, and as new technologies have enabled new ways of organizing, TSOs have assumed new forms and crafted new business models and processes. To achieve relevance and generate knowledge that is useful for TSOs there is a need for cooperation between academics and industry professionals to fully understand complex problems and contribute to solutions. (Drayton and Budinich 2010)

One axiomatical area of cooperation between these partners might be innovation since the need for constant development and ever-increasing challenges in transmission system operation require the combination of industry knowledge and academics' power of conception.

		Mechanisms (processes, practices, forms)	
		Stability Habits, routines, institutions, discipline, tight coupling, limits, commitments, control, and low variance	**Change** Search, mindfulness, redundancy, openness, preoccupation with failure, imagination, and variety
Outcomes (performances, objectives)	**Stability** Continuity, low variance, predictability, regularity, and reliability	**1. Exploitation** • Control reduces variation • Standardized routines and formalization lead to efficiency and undermine • Commitment and specialization enhance reliability and reduce adaptability	**2. Change enables stability** • Redundancy and loose coupling increase reliability • Moderate experimentation mitigates drastic failures • Doubt and mindfulness foster security and continuity
	Change Adaptability, high variance, innovation, and flexibility	**3. Stability enables change** • Control enables design and invention • Routines and formalization help manage the nonroutine • Commitment and specialization enhance adaptability	**4. Exploration** • Redundancy and loose coupling promote flexibility and innovation • Experimentation promotes adaptability and undermines reliability • Doubt stimulates discovery and change

Figure 1.
Classification of Stability and Change Relationships (Farjoun 2010)

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