

Chapter 7

An Innovative Approach to the Development of Project Management Processes for Small-Scale Projects in a Large Engineering Company

Claude Y. Laporte

École de Technologie Supérieure, Canada

Frédéric Chevalier

Tetra Tech, Canada

ABSTRACT

A 400-employee Canadian division of a large American engineering company has developed and implemented project management processes for their small-scale and medium-scale projects. The company was already using a robust project management process for their large-scale projects. The objectives of this project were to reduce cost overruns and project delays, standardize practices to facilitate the integration of new managers, increase the level of customer satisfaction and to reduce risk-related planning deviations. For this project, the engineering organization used the ISO/IEC 29110 standards developed specifically for very small entities, i.e. organizations, having up to 25 people. An analysis of the cost and the benefits of the implementation of small and medium scale project management processes was performed using the ISO economic benefits of standard methodology. The engineering enterprise estimated that, over a three-year timeframe, savings of about 780,000\$ would be realized due to the implementation of project management processes using the ISO/IEC 29110 standard.

INTRODUCTION

Standards are sources of codified knowledge and studies have demonstrated the benefits of standards, such as product interoperability, increased productivity, market share gains, and improved interaction with stakeholders such as enterprises, government organizations and the public. Standards and associated

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technical documents could be considered as a form of technology transfer and, if the right standards are selected and used correctly they should have an economical impact in an organization.

Many advantages or benefits as well as disadvantages or costs have been reported regarding the use of voluntary standards. Table 1 lists a few of the advantages and disadvantages reported.

The most recent study on the economic benefits of standardization (Miotti, 2009), performed by the French standardization organization AFNOR, showed that standardization made a significant contribution to growth of the French economy during the 1950-2007 period, i.e. 0.81% per year or almost 25% of GDP growth. The study was based on a survey of 1,790 French companies or organizations of all sizes and from all sectors of activity where 30% of respondents were from enterprises of less than 20 employees, 47% from small and medium enterprises (i.e. 250 employees or less) and 23% from large companies (i.e. more than 250 employees). The contribution of standards to the French economy is in line with data illustrated in Table 2 for other countries, such as Germany and Australia. In addition to known benefits of standards, five major lessons emerge from the French study (Miotti, 2009):

- Company value enhancement: The knowledge capital contributed by corporate involvement in standardization work represents true value.
- Innovation: Standardization promotes the dissemination of innovation. It emphasizes a product's advantages and constitutes a product selection tool.
- Transparency and ethics: Standards contribute to better compliance with the rules of competition. By establishing the rules of the game, standards make it easier to eliminate players who fail to comply.
- International: By promoting the development of international exchanges, standardization provides companies with a genuine passport for exporting their products.
- Product and service quality: Standardization gives companies a great degree of control over safety-related problems and provides a genuine guarantee of quality.

Table 1. Advantages and disadvantages of voluntary standards reported (adapted from Miotti, 2009; Land, 1997)

Advantages or Benefits	Disadvantages or Costs
<ul style="list-style-type: none">• Promote innovation• Improve efficiency of an organization• Increase competitiveness• Facilitate the access to a wider market• Clarify the rules of a market• Improve quality of products and services• Promote improvement of Processes• Facilitate partnerships• Improve the image, credibility of organizations• Promote a uniform terminology• Regularly updated• Facilitate the selection of suppliers and partners• Facilitate access to recognize knowledge• Facilitate access to investments and financing	<ul style="list-style-type: none">• Difficult to understand• Cost of acquire standards• Cost of standard implementation• Cost of certification• Require outside expertise to implement them• Conflicting standards• High number of standards available• Describe only 'what to be done' not 'how to do it'• Insufficient guidance to select and apply them• Slow evolution of standard may impede innovation• Difficult and costly to apply in small organizations• Difficult to demonstrate 'savings'• Many producers of standards• Perception that standards add unnecessary bureaucracy to an organization

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