

## Preface

The mobilization of electronic information across organizations has the potential of modernizing and transforming information exchanges. The current information exchange is, however, often inefficient and error-prone (Eckman, Bennet, Kaufman, & Tenner, 2007). Exchanges of information and services are often fragmented and complex, dominated by technical as well as organizational problems.

High-ranking issues among the defining purposes of e-government are highly agile, citizen-centric, accountable, transparent, effective, and efficient government operations and services (Scholl & Klischewski, 2007). For reaching such goals, the integration of government information resources and processes, and thus the interoperation of independent information systems are essential. Yet, most integration and interoperation efforts meet serious challenges and limitations.

Improved interoperability between public organizations as well as between public and private organizations is of critical importance to make electronic government more successful. In this book, stages of E-Government interoperability is identified and discussed. In one of the stage models, four stages are presented: work process stage, knowledge sharing stage, value creation stage, and strategy alignment stage.

This book is about electronic government interoperability, focusing on integration and interoperability in digital government. In addition to stages of interoperability, a number of other important topics and areas are covered in this book to shed light and generate new insights into the way forward for E-Government interoperability. For example, value configurations may differ between co-operating agencies, creating challenges in connecting primary and secondary activities.

The mission of this book is to:

- Identify barriers to interoperability and solutions to overcome such barriers. As will become evident and practitioners already know, there are surprisingly many and high barriers to move on to achieve benefits from E-Government.
- Classify government activities into value configurations for interoperability. As people in the strategy field already know, the contingent approach to strategy implies that value chains, value shops, and value networks have very different value creation logic.
- Align and integrate information resources to government tasks. Information as a valuable resource is enabling work processes to be carried out.
- Define stages of E-Government interoperability, which can be used by agencies to learn the path to improved interoperability. By identifying development stages, scholars, and practitioners have a framework within which they can diagnose the current situation and plan for future improvements in interoperability.
- Identify frameworks for aligned development to establish effective interoperability. A number of frameworks are presented in this book, enabling the reader to select one or a few that seem appropriate for the situation.
- Provide a model for strategic planning for alignment of E-Government initiatives. The Y-model describes the current situation and the desired situation, thereby evaluating a gap between current and desired that should be reduced and closed by means of a new strategy.

The generalizability of the findings in this book to the entire E-Government might be found problematic by some readers. We as authors have mainly used case studies in the end from law enforcement, and we have used those case studies to generalize it to entire E-Government. Some readers may have a problem with that, primarily because not all government functions are enforcement. As we are very well aware, governments also provide transaction services; in fact, those transaction services are a more sizeable part of some governments. Therefore, early chapters in the book are mainly applying examples from transaction services. We justify our law enforcement focus in terms of very high demands on interoperability to solve crimes committed by transnational organized crime group. Only if local police gets access to information from hospitals, customs, municipalities, schools and so forth, both domestic and abroad, are some of the trafficking cases possible to solve. The findings from law enforcement are very well generalizable to other government sectors, where interoperability contributes to improved service.

The audience for this book includes (but is not limited to):

- Information systems designers, developers and programmers in public and private software organizations, who want to think in the big picture of interoperability when solving technical problems.
- Project managers in IT projects, who are responsible for all aspects including interoperability of systems.
- CIOs and IT managers, who are responsible for operations of interoperable systems and information sharing.
- Undergraduate students in systems development, who should learn about the intricacies of not only technical interoperability, but semantic and organizational interoperability as well.
- Graduate students in management information systems, who will typically become project managers for IT projects and CIOs in both private and public organizations.

## Introduction to Chapters

This book is concerned with all the problems preventing governments all over the world from gaining the potential benefits of interoperability. It shows how governments can move out of these problems by addressing issues such as information resources, alignment projects and governance structure. At the most advanced level of interoperability, organizational interoperability, this book shows that it is more about politics and top management ambitions than it is about technical or technology options.

First, Chapter I starts out by defining and describing electronic government interoperability. Based on the concept of E-Government (or digital government), the extent of interoperability is measured in terms of transaction costs. When interoperability improves, then transaction costs drop. Transaction cost theory is important to understand interoperability in financial terms.

Chapter II introduces the concept of value configurations. A value configuration is the way an organization creates value for its stakeholders and clients. Three alternative value configurations exist for organizations. First, the value chain is a value configuration for sequential operations producing goods and services. Next, the value shop is a problem solving entity working in a cyclical fashion. Finally, the value network is connecting parties that exchange with each other. Interoperability between different value configurations requires connections into different primary activities.

In Chapter III, the resource-based theory is introduced. The main resource in more and more organizations is knowledge, and the representation of knowledge

in systems is information. Therefore, interoperable information systems support inter-organizational knowledge management. Strategic knowledge resources are characterized by being valuable, non-imitable, non-transferable, combinable, exploitable, and rare.

Chapter IV builds on the previous chapter by discussing ways of information resource integration. It discusses information asymmetry and information sharing, identity management in information resources, inter-organizational information integration, and managing integration projects. An example of geographic information systems is introduced, where geographic information from several sources are needed to provide a useful and complete picture of demographics, business, crime and weather in a geographic region.

Chapter V introduces the evolutionary perspective of stages of growth models. Such models are helpful to determine where an organization is, where it came from, and in what direction it is moving in terms of interoperability with other organizations. Stages of growth imply that there is a cumulative improvement over time, where continuous struggle and successes are more important than paradigm shifts.

A number of frameworks for aligned development have been proposed, and some of them are presented in Chapter VI. The frameworks for improved interoperability vary in breadth and depth, and there is so far no single framework covering all dimensions and aspects of interoperability in electronic government available. Instead, interoperability projects have to choose elements from several frameworks that seem suited for their specific situation. By selecting elements and ordering them in a useful way, an organization applies the contingent approach to organizational development.

Strategic planning for alignment is introduced in Chapter VII. The Y-model for IS/IT strategy includes steps for gap analysis, action planning, and implementation evaluation. Implementation of an information systems interoperability strategy is important for several reasons. Firstly, the failure to carry out strategy can cause lost opportunities, duplicated efforts, incompatible organizational and inter-organizational units and wasted resources. As well, the extent to which a strategy meets its objectives is determined by implementation. Further, the lack of implementation leaves users and managers dissatisfied and reluctant to continue doing strategic planning work. Finally, the lack of implementation creates problems establishing and maintaining priorities in future strategic planning.

When inter-organizational systems and information exchanges are introduced, who should then make decisions? In this case, several organizations are stakeholders in systems and exchanges and hence need to have a say when the system is modified, replaced or expanded. To organize decision rights in a professional way,

IT governance is introduced in Chapter VIII. IT governance defines key areas and accompanying decision rights for collaborating organizations.

In most organizations, the IT manager has a key role in all initiatives to improve interoperability. The IT manager, typically in the position of chief information officer (CIO), is involved in both strategic planning and strategy implementation. Therefore, Chapter IX introduces the role of CIO to shed light on what kind of position is important for success.

Chapter X introduces the case of police investigations. Many police investigations need information from other organizations to identify victims, suspects and criminal markets. In serious crime cases, often carried out by organized crime groups, information from law enforcement agencies in other countries is often required. When a Moroccan drug dealer in the city of Oslo receives his orders from an Albanian smuggler in Berlin, narcotics may have traveled through several countries on its way from Afghanistan or Colombia to the market in Norway. Policing organizations such as Europol and Interpol have systems that Norwegian Police is connected to, such as Schengen Information System (SIS).

Chapter XI returns to stages of growth for operability, focusing on the most challenging task of organizational interoperability. Organizational interoperability is dependent on executives who are willing to cooperate with executives in other organizations for mutual benefits. Levels of organizational interoperability are labeled business process interoperability, knowledge management interoperability, value configuration interoperability, and strategy position interoperability.

Finally, Chapter XII presents system dynamics modeling as a powerful tool for managers to identify, conceptualize, represent, and analyze operational, tactical and strategic business issues.

## REFERENCES

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