



Chapter X

Conclusion

This conclusion chapter will summarize and tie all of the information in this book together by focusing on the business dynamics in information technology. System dynamics for the entire IT organization in an enterprise, as well as the entire IT industry, is of importance to enable alignment between business needs and information technology capabilities.

Interactions between organizational performance and information technology create dynamics over time. Some of these dynamics are counterintuitive and surprising to management. Some of these dynamics have a spiraling effect of information technology that can cause not only exponential growth and prosperity, but also decline and collapse. Understanding the dynamics is essential to successful information technology management.

Many examples of such phenomena were presented in this book. For example, in IT governance, infrastructure congestion may increase as a consequence of infrastructure investment. The positive feedback loop illustrated in Figure 3 in chapter 3 goes like this: Higher infrastructure congestion leads to more infrastructure investment, more infrastructure investment leads to better infrastructure capability, better infrastructure capability leads to more infrastructure visits, and more infrastructure visits leads to even higher infrastructure congestion.

This example is similar to traffic congestion in cities such as Oslo, Norway. After having improved the highway around the city of Oslo some years ago, traffic congestion is now higher than ever before on this highway. One of the major reasons for this result is the increasing distance between living location and working location. As the highway improved, people selected housing in nicer neighborhoods that were often further away from work. As the highway improved, people did not move when the office location moved to a location farther away. This analogy to infrastructure congestion is interesting in light of service-oriented architecture for infrastructure that was popular in 2006.

Another example in this book is concerned with dynamics of outsourcing relationships. Based on Lee and Kim's (1999) static study of partnership quality, this book developed a dynamic model of partnership quality. In Lee and Kim's (1999) study, partnership was found to be one of the significant determinants of partnership quality. In the system dynamics model, participation is part of a positive feedback loop consisting of agency quality, participation, and partnership quality. If agency quality deteriorates, for example because of alliance management experience, then participation will decrease and partnership quality will deteriorate, leading to further deterioration in agency quality.

This is illustrated in Figure 2 in chapter 6. The point is that a positive feedback loop is self-enforcing in both negative and positive directions. Depending on the starting point, such a feedback loop might cause fast deterioration in partnership quality. As illustrated, if the starting point is deterioration in agency quality, then partnership quality will go down as a consequence of lower participation.

An interesting aspect of system dynamics that was not included in this book is the effect of delays on business dynamics. Often, delays cause fluctuations over time. For example, if the IT organization experiences fluctuations in performance over time, this might have been caused by the CIO's decision making rather than external factors.

System dynamics modeling involves much more than presented in this book. It is a computer simulation tool, enabling computer simulations of business dynamics in information technology based on different assumptions and scenarios. The interested reader might find what he or she is looking for in Sterman's (2000) book on business dynamics.

2 more pages are available in the full version of this document,
which may be purchased using the "Add to Cart" button on the
publisher's webpage: [www.igi-
global.com/chapter/conclusion/6061](http://www.igi-global.com/chapter/conclusion/6061)

Related Content

Mining Association Rules from XML Documents

Laura Irina Rusu, Wenny Rahayu and David Taniar (2009). *Services and Business Computing Solutions with XML: Applications for Quality Management and Best Processes* (pp. 176-196).

www.irma-international.org/chapter/mining-association-rules-xml-documents/28975

The Effects of National Culture on Social Commerce and Online Fashion Purchase Intention

Sarah Josephine Hepple and Julie A. Dennison (2017). *Advanced Fashion Technology and Operations Management* (pp. 250-276).

www.irma-international.org/chapter/the-effects-of-national-culture-on-social-commerce-and-online-fashion-purchase-intention/178834

Implementing Cloud Information Systems: SaaS Migration

Kamran Janamian (2014). *Information Systems and Technology for Organizational Agility, Intelligence, and Resilience* (pp. 117-138).

www.irma-international.org/chapter/implementing-cloud-information-systems/107105

Enterprise Information Systems for Business Integration in Global International Cooperations of Collaborating Small and Medium Sized Organisations

P. H. Osanna, N. M. Durakbasa, M. E. Yurci and J. M. Bauer (2010). *Business Information Systems: Concepts, Methodologies, Tools and Applications* (pp. 1560-1570).

www.irma-international.org/chapter/enterprise-information-systems-business-integration/44155

Making the Business Process Execution Language (BPEL) Flexible

Daniela Wolff and Nishant Singh (2011). *E-Strategies for Resource Management Systems: Planning and Implementation* (pp. 1-20).

www.irma-international.org/chapter/making-business-process-execution-language/45095