



Chapter XIII

A Conceptual Framework Enabling Assessment of Software Flexibility in Business Applications

Stephen L. Dyer

Marlborough Stirling WebTech Ltd., British Isles

This chapter discusses the design of a technique for measuring the flexibility of business information systems. It argues that a technique for measuring software flexibility can be designed from existing principles using a qualitative approach. It then describes the design process undertaken to develop a software flexibility assessment technique that could be used to assess the adaptive capacity of business software applications.

First, the author introduces the background to the subject and gives the justification for developing a suitable business-oriented measure of software flexibility. He then tackles the design issues and problems that arise when confronted with the complexities of qualitative measurement, before describing the steps of the design process. Afterwards, the stages in the application of the technique are described, with a worked example. Finally the benefits and weaknesses of the technique are discussed, and an opinion expressed as to the usefulness and applicability of the proposed technique.

INTRODUCTION

This chapter discusses the requirement for a technique for measuring the flexibility of a business information system. It also describes an attempt to design such a technique based on accepted practices and analytical techniques. It then describes the operations of the technique using a worked example and provides a critique of the proposed technique's strengths and weaknesses.

Business commentators such as MacMillan (MacMillan & Christophers, 1997) consider that one of the major strategic requirements of business software applications at present is flexibility. The emerging view is that the global business community needs software systems with the flexibility to be adaptable to the changing demands of the business. Development of software systems that align only with the information systems strategic planning of a business does not ensure the continuing efficacy and usefulness of those software systems as the business changes and evolves over time. Software applications should also be designed to accommodate the changing strategic and operational business requirements that may not be evident during the development phase of an application. Software systems need to evolve with the business.

When designing or purchasing software applications, a business needs a range of techniques in order to analyse and measure the flexibility of the software solutions available. Common measurement criteria can then be used to compare flexibility between applications. This chapter describes the development of a measurement technique that may be used to assess the degree of flexibility of a software application. This chapter describes the design process that created the technique, as well as the operational mechanism of the technique itself.

A review of the computer and strategic management literature was conducted, looking for ideas and methods that could be integrated and developed into a technique for measuring and assessing the flexibility of software applications. From this review, a simple scoring system based on a 3 X 3 matrix framework was devised to rate software tailorability against general business factors. A worked example shows how this scoring system was applied to a business application.

The chapter concludes by discussing the efficacy and usefulness of the software flexibility framework as a scoring technique. The strengths and weaknesses of the framework are examined and areas for improvement identified.

BACKGROUND

Businesses undergo tremendous changes in their marketplace and product range over time. Companies face the twin challenges of consolidation and diversification in an effort to remain competitive and distinct in an increasingly global and

17 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/conceptual-framework-enabling-assessment-software/4224

Related Content

A Rough-Sets Approach to Kansei Evaluation Modeling and Design Support

Hongli Juand Yoshiteru Nakamori (2010). *International Journal of Knowledge and Systems Science* (pp. 33-44).

www.irma-international.org/article/rough-sets-approach-kansei-evaluation/46651

Special Children Behaviour Pattern and Their Teaching Strategies

Urmila Shrawankar (2021). *International Journal of Knowledge and Systems Science* (pp. 38-51).

www.irma-international.org/article/special-children-behaviour-pattern-and-their-teaching-strategies/275808

Riddle of the Sphinx: Paradox Revealed and Reveiled

Terry Marks-Tarlow (2008). *Reflexing Interfaces: The Complex Coevolution of Information Technology Ecosystems* (pp. 21-32).

www.irma-international.org/chapter/riddle-sphinx-paradox-revealed-reveiled/28369

Synthesis of Analog Circuits by Genetic Algorithms and their Optimization by Particle Swarm Optimization

Esteban Tlelo-Cuautle, Ivick Guerra-Gómez, Carlos Alberto Reyes-Garcíaand Miguel Aurelio Duarte-Villaseñor (2010). *Intelligent Systems for Automated Learning and Adaptation: Emerging Trends and Applications* (pp. 173-192).

www.irma-international.org/chapter/synthesis-analog-circuits-genetic-algorithms/38455

Towards Adaptive and Scalable Context Aware Middleware

Antonio Corradi, Mario Fanelliand Luca Foschini (2012). *Technological Innovations in Adaptive and Dependable Systems: Advancing Models and Concepts* (pp. 21-37).

www.irma-international.org/chapter/towards-adaptive-scalable-context-aware/63572