

# Chapter 10

## User–Centred Design and Evaluation of Information Architecture for Information Systems

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### ABSTRACT

*Information Architecture plays a central role in the usability of Information Systems. It is vital that organisations employ appropriate methods to know their users when designing and evaluating Information Architecture in their systems to make them more effective. This chapter presents concepts and techniques to help organisations apply user-centred methods to design and evaluate Information Architecture in their Information Systems. The discussion is centred on the card sort technique, presenting its main variants and their applicability. The chapter also presents a worked example with the application of the Card sort technique to organise the content of the authors' university website, with data collected from 38 participants. By means of the discussion of the worked example, the chapter presents how to prepare a Card sort, recruit participants, run the study and analyse the results to be applied in the design and evaluation of Information Architecture of Information Systems.*

### INTRODUCTION

Global advances in Information Technology (IT) have made it a strategic force to provide competitive and economic advantages for organisations.

Applying IT resources appropriately can help organisations significantly by enhancing management information flow, which has led enterprises to become progressively more aware of every new feature and opportunity in this area.

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A software era has begun since the popularization of personal computers and, since the last decades, has become even more prevalent among all sectors of society. The growth of Internet solutions can be deemed as one of the main causes for making computers more ubiquitous in the world as never seen before. The use of IT in everyday life tasks is more prevalent than ever. This makes it very important for specialists to be aware of methods that can significantly improve the way people interact with computer technologies, as this can have a very significant impact on the quality of their lives, both at personal and professional levels within a number of organisations.

Information Architecture, as defined by Rosenfeld and Morville (2006), is considered as the “art and science of shaping information products and experiences to support usability and findability”. In order to obtain useful results with Information Architecture efforts, development teams must consider ways to improve the user experience and how users expect to find information in highly complex and fast-growing information systems. If appropriate important information cannot be found in a system, users can be extremely frustrated and their attempts to perform their tasks in all sorts of systems can be significantly hampered.

To achieve success in software development, it is essential to involve users throughout the development process, as pointed out in a recent systematic review of the literature in the area conducted by Abelein and Paech (2013). A common mistake during software development is to layout the Information Architecture of systems relying solely on the views of the system developers, disregarding the important view that different users can have. Nielsen (2004) states that, to enhance usability, it is important to consider users’ point of view, and he also showed that e-commerce sales increases when products are shown in categories where users expected them to be at. Conducting the software development assuming users’ point of view may still be a hard task due to the fact that many development teams lack awareness and

do not pay enough attention to user issues when pressed by tight deadlines and staff shortages (Loranger, 2014).

When searching for better software design solutions that are capable to provide better user interaction, it is of utmost importance that appropriate methods and techniques be used to elicit requirements from users and to understand their mental models. One of the most widely used techniques to understand users’ mental models and help build good Information Architecture is the card sort technique. This technique has been widely used to help design and evaluate the Information Architecture of websites and all sorts of IT systems (e.g. Doubleday, 2013; Mvungi, De Jager, & Underwood, 2008; Robbins, Esposito, Kretz, & Aloï, 2007; Turnbow, Kasianovitz, Snyder, Gilbert, & Yamamoto, 2007).

The purpose of this chapter is to help researchers and practitioners working in different kinds of organisations to gain a broad understanding of user-related issues in designing and evaluating Information Architecture of information systems. In particular, the chapter aims to help them increase the quality of systems by enhancing their Information Architecture by applying user-centred approaches to acquire a deeper knowledge of users’ mental models using appropriate processes and techniques.

The following topics discuss current trends in Information Architecture and application of user research methods, with focus on details of the application of the Card sort technique to obtain users point of view about data classification. Petrie *et al.* (2011) showed that this is a simple way to gain insight into user categorizations and mental models of the items that are represented on the cards. This chapter also shows information about current gaps inside this theme and industry challenges. The chapter is concluded by the presentation of a case study with the application of the card sort technique to design the information architecture of a university’s website.

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