Resume

Master Thesis Subject: Occasionally Connected Smart Client

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In the past few decades it has begun a process of mingling in between the business and the newly developed software technologies. The companies seek ways to extend themselves by supporting the employees with flexible working process, based on higher mobility and full access to information that is not restricted by time or location. The corporation needs are complex software with plenty of functionalities that covers all the business area. The developers should address the need for complex software solutions and deliver the application in short time terms. That's why great popularity gain module based applications, developed by ready for use factories. Smart client application is a concept-new type of application which satisfies the mobile user needs. Its characteristic includes rich Windows Interface that uses the growing computing power of the local machine processor, and the flexible web technologies.

Master thesis targets the area of developing module, offline smart clients with the help of Microsoft Software Factories (Composite UI Application Block, Smart Client Software Factory, ClickOnce).

The expected document audience is software architects and developers. The collected and summarized information allows the document to be used for smart client development guidance.

The Master thesis is divided into 10 parts. The first chapter "Review of the available technologies" is introductory and its aim is to acquaint the reader with the main smart client

concepts. It discusses some architectural issues and provides guidance to help architects determine if the client architecture is right for their application and when it should be chosen instead of thin client architecture. The second chapter “Smart Clients Data Caching” discusses one of the main smart client aspect – caching. It states that caching should be handled by implementing or using caching infrastructure. It should support storing data, strategies for handling old and stale data, strategies for scavenging cache. The next chapter „Offline Smart Client Applicaitons” is devoted to offline smart client architecture. It discusses how it helps handling data collisions, which are result of data caching, when the application was offline. The chapter reviews data-centric approach and service oriented approach. The reader has been introduced to specific problems, connected to the development of smart clients and the possible ways to solve them. The fourth chapter „Microsoft and smart clients - CAB, Smart Client Software Factory, ClickOnce” is targeting the ready for use application blocks and factories. The next two chapters describe the demo application that was developed and how it should be tested. The chapter „Alternative development and future extensions” contains alternative ways for the developing of smart client applications based on different technologies, not Microsoft ones. It ends with guidelines how the master thesis should be extended. The master thesis ends with a summary, list of the referenced literature and appendix, containing class diagrams of the developed demo solution.

Master theses concludes that CAB and SCSF are appropriate choice for developing smart client applications, because they provide clear method for developing complex module applications. The client receives the application he required in shorter terms and on time.