

## Chapter 8

# Moving to SaaS: Building a Migration Strategy from Concept to Deployment

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### ABSTRACT

*The new market trends include globalization and service orientation as important drivers that are changing the way in which businesses operate. Companies are requesting flexible applications that can be acquired and executed seamlessly and independently of the location. This situation is progressively pushing businesses from a proprietary system orientation to a service one. Accordingly, more and more traditional software vendors are noticing the need to transform their current business and technology model in order to remain competitive in the market. Software as a Service (SaaS) has been set by these companies as a mandatory way to keep their existing customers while at the same time seizing the chance of acquiring new customers in unexplored markets. However, this transition from Software off-the-shelf to Software as a Service is not trivial as many issues (business, application, and technical) come into play. The real hands-on experience in implementing end-to-end SaaS migration strategies considering both business and technological dimensions of the problem are hardly covered. Hence, there exists a real demand for proven methods to perform the transition from traditional software products to the services concept. Based on this premise, this chapter presents a stepwise procedure and a method to migrate non-SaaS applications to SaaS taking into account not only technical and technological issues and constraints but also those issues related to business models and the monetization of the final solution.*

*These methods are currently being supported by real-life experiments carried out in different companies based on successful SaaS implementation experiences, a deep understanding of the details, and a proven approach to making SaaS transformation happen in an accurate, secure, and sustainable way.*

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## INTRODUCTION

### Synopsis

The chapter presented here starts with an introduction of the topic and a presentation of the current approaches to migrate legacy applications to SaaS, including the distinction of SOA and SaaS concepts. The authors present which challenges that are facing the companies that wish to migrate to the cloud delivery model. The main body of the chapter is devoted to the technical outline of the proposed solution starting with the establishment of the basis for the migration strategy (analysis of the initial and the target situation and a technical and business feasibility analysis) and proposing a set of methods and technologies for the performance of the migration as well as the provision of the final service.

The chapter rounds off with the presentation of the stated approach validation in eight companies in Spain and a detailed explanation of a real use case extracted from one of those companies. The chapter concludes with the considerations arisen from these first implementations of the solution.

### General Objectives and Perspective of the Chapter

The transition from a traditional software development and delivery model to the SaaS world is proving to be not trivial and therefore many changes are needed to be performed in order to accomplish the technical, application and business requirements of SaaS. This triple migration is complicated and an overall systematic and standardized approach is, for the time being, not publicly available. Thus, companies humbly face the decision of which existing technology to migrate to and via which distribution channels to make it available but in any case, without risking the sustainability of their business. This decision requires not only from a method but also from tools that provide meaningful figures that can be

used in this decision making process. These tools shall at least cover the calculation of the running costs for SaaS solutions as well as the calculation of the income expected from such offers, while considering also additional and numerous factors, which can be levied only based on the choice of a specific platform.

The innovative aspect of the approach presented in this chapter is that it will lead companies in this re-engineering and architecture modernization effort, by analyzing the source code (i.e. searching for clones, degree of coupling, etc.) as well as the architectural patterns in the application-to-be-migrated. This approach will also provide an analysis on

1. Where the current architecture does not address SaaS architectural requirements,
2. Specific changes needed, as well as
3. Suggestions of existing software components and services.

Interplaying with that, other factors will be taking into account such as business goals and models, costs, effort, impact, ROI, and payback.

## BACKGROUND

According to NIST (NIST Cloud Computing, 2011), Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

The NIST definition of cloud computing defines three delivery models:

- **Software as a Service (SaaS):** The consumer uses an application, but does not control the operating system, hardware, or network infrastructure on which it is run-

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