

A TELECOMMUNICATIONS SERVICE MANAGEMENT COURSE MODEL FOR THE COLLEGE OF BUSINESS

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ABSTRACT

We propose a model for a Telecommunications Service Management (TSM) course focused on the curriculum needs of undergraduate Information Systems (IS) majors within the College of Business. The proposed course model is designed to give IS graduates an awareness of the issues that serve as barriers to effective service management (SM) in telecommunications industry. The goal of the course is to provide industry with IS employees who can help implement successful telecommunications service management strategies that meet diverse telecommunications service subscribers' requirements efficiently. We will describe three course related areas, choice of textbook, syllabus, and course activities.

Keywords: Telecommunications Service Management (TSM), Service Management (SM), Information Systems (IS), course model, textbook, syllabus, course activities

INTRODUCTION

The importance of a Telecommunications Service Management (TSM) course in the College of Business is growing day by day. This paper proposes a model for a Telecommunications Service Management course focused on the curriculum needs of undergraduate Information Systems (IS) majors within the College of Business. The proposed course is designed to give IS graduates an awareness of the issues of service management in telecommunications industry.

This paper is composed as the following. The TEXTBOOKS section introduces textbooks currently available for teaching telecommunications service management course for the College of Business students. The SYLLABUS section outlines the content of a model syllabus. The COURSE ACTIVITIES section explains course activities composed of individual case research project and group case research project. Final section summarizes a few conclusions.

TEXTBOOKS

As part of the curriculum in telecommunications and computer networking for college students, a need of solid understanding of telecommunications service management concepts is being increasingly emphasized. There are two major driving forces behind this.

First, since the introductory telecommunications course is increasingly becoming a required course in undergraduate Information Systems (IS) degree programs many universities may be considering offering a second telecommunications course. Although service management concepts are taught as a part of Operations Management discipline courses [5, 9], Telecommunications Service Management course is typically not offered as a single stand-alone course for the College of Business Students. Offering a Telecommunications Service Management course would be beneficial to the business students. Secondly, the present level of telecommunications services offered by many telecommunications service providers in industry does not fully satisfy the various telecommunications service subscribers' requirements [1, 8]. The Telecommunications Act of 1996 accelerated the fierce competition among the Telecommunications Service Providers (TSPs). As a result, the telecommunications service subscribers do not understand the various services offered by many TSPs exactly.

Considering the above two factors, selecting the best textbook among currently available ones [1, 2, 6, 7, 10, 11, and 12] is a very important issue. There are not many textbooks available now as far as we know because the concept of Telecommunications Service Management was introduced and researched very actively since mid 1990s. Since the introduction of the Telecommunications Act in 1996, the management of telecommunications service became a hot issue. Many TSPs strived to generate more revenues by introducing more efficient service management techniques in an effort to secure more service subscribers.

Everybody agrees that *The Lean Communications Provider* based on the technical contributions from the members of NMF (Network Management Forum: currently, TeleManagement Forum [15]) is a pioneering book in the field of Telecommunications Service Management [1]. It is composed of four parts. The first part introduces the emergence of Telecommunications Service Management in the market, its definition and internals, service management requirements and perspectives of service providers (SPs) and private enterprise network operators, and emphasizes the importance of service management excellence in the consistently dynamically changing telecommunications market environment. The second part covers service integration and the architecture for service management, interoperability between different service management systems, and barriers to excellent service management. The third part emphasizes the importance of cooperation with other organizations in the global telecommunications environment. It introduces the purpose of NMF and the importance of a common model for effective communication among participating members in service management excellence, service management business process model (BPM), major telecommunications service management areas such as order handling, problem handling,

performance reporting, billing, the transition of business process agreements to technical specifications, and a systematic approach on the issues of software platform model, interoperability, legacy systems, and conformance requirements. The final part deals with making the business case for service management excellence, introduces how to build an individual project case, shows how to work with internal and external constituencies of service provider (SP) to effective service improvements, illustrates how to select a practical implementation approach and put principles in practice to achieve the goal of telecommunications service excellence.

Recently published book *Management of Telecommunications* [2] introduces telecommunications management by assigning a part named as ‘Managing Telecommunications.’ The chapters of this book introduce the areas of the management of telecommunications: management of telecommunication groups of people and their tasks, and telecommunications project management.

SYLLABUS

This section explores syllabus development. The proposed course content is based on the review of the documents the IS '97 [13] and the IS 2002 [14]. The IS 2002 guides the content of the course explicitly by suggesting the IS 2000.6 – Networks and Telecommunications. The suggested scope of IS 2002.6 will be illustrated in the proposed course. The management of telecommunications networks, cost-benefit analysis, and evaluation of connectivity options will be covered in detail. Evaluation, selection, and implementation of different telecommunication service options within an organization will be also included in the syllabus.

At James Madison University (JMU), the Information Technology and Management Science Program is currently offering three Telecommunications Service Management related courses: CIS 320 Telecommunications and Information Processing, CIS 420 Computer-Based Networking, and CIS 424 Computer Security Management [16].

Based on IS 2002.6 and the course content of three present courses being offered to the students at JMU, we suggest the course syllabus of a Telecommunications Service Management course model as follows:

1. Introduction
2. What is Telecommunications Service Management (TSM)?
3. Service Management Requirements of Service Providers (SPs)
4. Service Management Perspectives of Private Network Operators

5. Integration of Telecommunications Services
6. Service Management Systems Interoperability
7. Service Management Integration Architecture
8. Service Management Systems Framework
9. TeleManagement Forum (TMF)
10. Business Case Design for Better Service Management
11. Individual Project Case Construction
12. Toward Effective Service Management Paradigm
13. Practical Implementation Principles for Successful Service Management & Evaluation
14. Future Directions of Telecommunications Service Management (TSM)

COURSE ACTIVITIES

This section describes the course activities we are planning as a part of the proposed course. The proposed course model will contain several course activities including individual and group case research project, and Telecommunications Service Management software hands-on practice.

Individual Case Research Project

The individual case research project will be assigned to each student and the individual research topic can be selected freely by the students themselves. A set of available individual research topics may be suggested by the instructor to the students in advance. The domain of the topics suggested will be in the Telecommunications Service Management. To aid the students in their literary search necessary for their research, inviting a professional business librarian to serve as a guest speaker for the class will be very useful. Through the experience of teaching the courses CIS 320 [4, 10, and 16] and COB 204 [16] at James Madison University, it was evident that preliminary literary search teaching sessions to guide the students' individual researches were very useful. The output of the project will be evaluated in content, format, style, and other predefined criteria. Detailed output guidelines for the research projects will be included in the syllabus distributed in the beginning of semester.

Group Case Research Project

After completing an individual case research project, group case research projects can be assigned to each group of three to four students. The research topic can be selected by brainstorming among group members. A set of available group research topics may be suggested by the instructor to the students in advance. The available topics suggested can be

recent hot issues in Telecommunications Service Management industry. Once the group research topic is decided by the group members, the students are asked to perform their group research according to the following steps:

1. Survey the state of the art of the selected issue.
2. Select a target telecommunications service provider (TSP) and a target service delivered by that TSP. The service selected should be relevant to the issue selected in the step 1.
3. Survey the target service selected in the step 2.
4. Derive any features which can be improved further by using available service management techniques discussed in the class.
5. Suggest new ideas to improve legacy services currently offered to the service subscribers and future directions.

The performance of each group is monitored by asking the students to turn in their progress reports according to the predefined milestone of group research project. The final group project report will be presented in class by the students before the end of the semester. It is evaluated by the instructor and the peer group member students. The students turn in their research results in the form of presentation material, written project report, and a set of their own questions based on their research topic. The questions collected from all the groups may be used to test the understanding level of the students on the research topics of other groups in the final exam. It can motivate the students to join group activities more actively. The output of the group research project will be evaluated in content, format, style, and other predefined criteria. Detailed output drafting guidelines will be included in the syllabus distributed in the beginning of semester. Based on my past experience of teaching the course CIS 320 [4, 10, and 16], the group research project stimulated the students in learning new and interdisciplinary concepts in a more flexible and comfortable learning environment through the peer education process.

Service Management Software Hands-on Practice

Hands-on practice opportunities of actually using service management software are beneficial in enhancing the students understanding of service management concepts. Considering limited budgets, the use of public domain software which is downloadable from the Internet is perfect for telecom labs. The hands-on practice opportunity can be offered as a hands-on lab session or an individual take-home assignment according to the learning environment.

There is not much Telecommunications Service Management software available for the college student educational purposes. As an intermediate step, we can start to use network monitoring and analysis software then migrate to practice network management software and finally try telecommunications service management software. The data service management software also can be considered as Telecommunications Service Management software.

The reference [3] suggests a web-based network analysis framework based on the public domain software. It can be a good starting point toward the Telecommunications Service Management framework based on the public domain. Needless to say, we should strive to secure more reliable and full-fledged Telecommunications Service Management software hands-on practice environment by purchasing software which are used in the real telecommunications industry and facilitating necessary telecommunications lab facilities in the future.

CONCLUSIONS

As the importance of networking/telecommunications education for College of Business students is growing, we suggested a new Telecommunications Service Management course to satisfy diverse requirements of telecommunications industry.

The offering of the proposed course Telecommunications Service Management at the colleges will make the telecommunications industry enjoy the benefit coming from the more satisfaction of subscribers by the help of IS employees who can implement successful service management strategies satisfying subscribers' requirements better. Several issues, such as the proposed course content, format, swift reflection of industry's requirements, course activities, fair evaluation of students' performance, and efficient course delivery methods can be refined as the proposed course model is implemented in the future.

As a pilot course, we hope the proposed course model opens a new horizon in the development of new College of Business course satisfying diversified and dynamic telecommunications service subscribers' requirements and synchronizing with fast changing telecommunications technological demands.

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