Case Study 1: Titanic Books[1]

On September 8th, 2009 Charles Saley, President and CEO of Titanic Books, decided to offer his company's collection of 80,000 books in electronic form on the Internet. Titanic Books publishes a variety of titles in the Fine Arts, Science and Fiction. They are especially well know for the quality and workmanship of the books and Saley had demurred for years providing them on the Internet because he was concerned about diminishing the quality of the reading experience.   However, it was clear that total electronic publishing was on the horizon and he wanted to insure that Titanic Books remained viable in the next decade. He believes the only way to insure success is to have an electronic system selling books by September 2010.

Saley summoned his Chief Information Officer, Gregor Padalka, for a discussion on current development resources at Titanic Books. Gregor Padalka had been with the company for five years and served in various capacities from developer to, for the past three months, the CIO of the 30 member IT Department at Titanic Books. Although Saley spent little time with IT, he had great confidence in his IT Department. For the past 20 years it had won a variety of accolades in the industry. Saley explained his decision to Padalka and asked him to be in charge of implementing the program. Saley reiterated his concern that the reading experience be in keeping with the standards of Titanic Books. In particular Saley was very concerned with the quality of the reproduction of each page when viewed electronically, the uniqueness of the service and the security of his assets from electronic piracy. Saley wanted a readout on the project in two weeks. Saley stressed that the consumer should not be required to buy any additional hardware and that the sales experience should be comparable to that of a bookstore but done exclusively on the web.

Padalka's team consisted of 4 managers: 1 for operations, 1 for maintenance and testing and 2 for development. Operations was run by Sharon Mire and was the largest group with 10 staff members. James Lu ran the 7 person maintenance and testing organization. The development organizations had 4 developers each with Raj Shah running the tool group and June Waite running the applications group. Padalka especially valued Shah and Waite's opinion since they never permitted themselves to stray far from their development roots and did much more development than managing. Mire on the other hand was a strictly process driven manager and Lu was originally the other development team manager until Padalka was promoted. Lu had the longest tenure with the company (25 years) and when Padalka was his peer he thought Lu spent too much time managing.

The next day Padalka met with his development managers and Sven Torsen the head of marketing and sales. Torsen had met with Saley separately and Padlaka hoped that he might provide some additional perspective on the project. Padalka began by reprising his meeting with Saley, emphasizing the visibility of the project and the need to have something commercially viable by

September, 2010. Padalka said that current industry estimates for systems of this type were around 300 KLOC and this was a chance for them to produce their first large system (Their largest previous system was 80 KLOC, half of that was reused code, and took 6 months with 15 developers). Torsen agreed with Padalka's representation but then added some concerns of his own. Titanic Books has a very vital relationship with private booksellers and small campus bookstores. In fact private and campus stores accounted for eighty percent of Titanic's sales. Torsen wanted any service to include these bookstores as part of the process. After a short discussion the following table provides the action items of the meeting:

Name	Task	Document
Torsen	Describe private bookseller concept	Appendix 1
Padalka	Roles and responsibilities, timeline, resource estimate	Appendix 2
Shah	User experience	Appendix 3

Table 1. Meeting 1 Action Items

At the end of the two weeks, Padalka meets with Saley. Saley also has invited to the meeting Sven Torsen and Nancy Tse, Chief Financial Officer of the Corporation. Tse had previously served as CFO of a large software company. After hearing the presentation from Padlka which used the appendices and other requirement's diagrams for material, Tse is not pleased and suggests that Saley audit the current state of the project before it proceeds. Saley agrees with reservations.

You are a member of that audit team. As preparation for the audit the two of you should:

1) **List the non-functional requirements and the associated stakeholder(s) responsible for them**
2) **From the text and appendices, sketch out the scenarios, indicating any steps you may have added for completeness and continuity (using any notation):**
   a. **Becoming a subscriber (both Torsen and Shah versions)**
   b. **Ordering a book**
   c. **Leaving the service**
3) **Provide an overall critique of the "plan" for Saley and Tse listing elements of risk, issues, analysis of his resource estimate, roles and responsibilities and schedule. Draw on all of the information in the document for your evaluation.**
4) **How would you proceed? Which software process model would you use? How would you assign the current managers roles and responsibilities? Do**

you agree with Padalka? How would you acquire additional resources? Would you use or add to internal resources, external resources or a combination of internal and external resources?

Appendix 1
Private Bookseller Concept
Sven Torsen

It is necessary to maintain an affiliation with our brick and mortar base, the private and small college bookstores, that comprise eighty percent of our sales. My proposal is that the customer must visit a bookstore to signup for the electronic service. This is the only way to access the service. The bookstore takes his email address and credit card number, validates it and sends via email the url of a web page where the customer continues the process, downloading the software, user manual and establishing her public/private key pair.
The customer does not have to reenter her credit card online and can call or visit the store for personalized customer support. The store will have a complete history on file for that particular customer. The customer also will have the opportunity to buy the hardcover book at a substantial discount at the store servicing her account. Other options include buying an electronic copy of the book in addition to the hard copy at a substantial discount or ordering an electronic copy at the bookstore. The customer can then download the electronic copy when she arrives home. The local bookseller gets a cut of the original book and gets paid a set fee a month per customer for customer support.

Of course, all electronic copies will use Public Key Encryption.

Appendix 2
Padalka's Development Outline

Roles and Responsibilities:
- Padalka – project manager
- Shah – requirements and prototyping
- Waite – development
- Mire – system Operation
- Lu – testing and overall Quality Assurance

Timeline:
September 8, 2009 – project begins
October 28, 2009 – first prototype demonstration of user experience
December 22, 2009 – first demo of book mastering system

March 19 2010 – first customer trial
September 4, 2010 – system turned live

Resource Estimates:
Padalka figures he would get at least twice the productivity of Lu's original
project with more aggressive management and could do it by tripling the size of
Waite's and Shah's teams raising the two development teams from 2 managers
and 8 developers to 2 managers and 24 developers. He hopes to have all the
hiring done by November 1, 2009.

Appendix 3
User Experience

Raj Shah interviewed 3 of his close friends who were avid readers and bought at
least one Titanic book in the first year.   From these interviews he described the
web experiences for becoming a subscriber, ordering a book, moving to a new
machine and leaving the service.

Becoming a Subscriber
(Shah realizes this may change if Torsen's recommendations are followed.)
The user would visit Titanic's web site (www.titanic.com) and browse electronic
book section.   If she wants to become a member, she would click on "become
a member" Alternately they could be led to become a member through a web
ad.   The user would then provide an email address, home address, phone
number, credit card, password and operating system. Before the software is
downloaded the user would be asked reading preferences so that Titanic could
send them special interest emails. The user would download the software,
uncompress it and activate the program. The program would establish private
and public keys. A test of the software would be to download an electronic
copy of a short story that matched with the interest survey marked on the
questionnaire.

Ordering a book
The user first enters the general Titanic web site. The web site offers electronic
book customer login and the customer logs in using her email address and
providing the password offered during the subscriber process. If the user forgets
her password she can click on "forgot password" and it would be mailed to her
email address. Once the user logs in she is presented with new titles congruent
with her interests. She also can change any information in her personal profile
(but she must relogin for an extra measure of security). The user then selects a
book to purchase, her credit card is charged and the download begins. The
system uses her public key to encrypt the licenses. The book is then downloaded
to the machine and after the book is decompressed the viewer is initiated. If
unsuccessful the user interacts with the website's customer service to resolve the
problem.

Leaving the service
The user first enters the general titanic web site. The web site offers electronic book customer login and the customer logs in using her email address and providing the password offered during the subscriber process. If the user forgets her password she can click on "forgot password" and it would be mailed to her email address. The user then indicates she would like to leave the service by clicking "user services" and then "discontinue service." The system then requests email address and password again for additional security. It then asks why the person is leaving the service, providing a set of choices and states an email will be sent to them and they should reply within 1 week to confirm their intention.

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[1] This case study is completely fictitious and any resemblance to people living or dead or current or previous companies is completely coincidental. This case study is used in conjunction with a University of Pennsylvania course on software engineering.