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**Sent:** Tuesday, 09 July 2019 9:59 AM  
**To:** Mtombeni, Mandla <Mandla.Mtombeni@wesbank.co.za>  
**Subject:** Software project management Assignment 2. - [External Email]

Hi Mandla,

Please see below instructions for assignment2 of Software project management. With the highlighted, is it correct of me to say we only allowed to use the prescribed articles only? Busy with it, will send you to review once done. It’s due on the 26th.

**Assignment instructions:**

**Question 1:**

Project managers are often faced with the challenges of managing software projects.

Conduct a detailed research on contemporary approaches and frameworks for managing software projects. In particular find frameworks used for managing enterprise agile software development projects. There are many such frameworks in literature, so to justify your choice do the following:

a. Discuss in detail the major components of the framework, base your discussion on at least 3 scholarly references. No references no marks. Use only journals and conference proceedings as references. Any other sources besides the stipulated ones will get zero marks. [30 marks]

b. Discuss three aspects of your selected framework that makes it a better choice for its purpose.  Provide references to support your discussion. No references no marks [15 marks]

c. Explain possible limitations of the selected framework. [5 marks]

**Question 2**

Question 2 [50 marks]

Note that: Detailed discussions are needed to earn full marks, shallow answers will earn you very little.

Using the information given in this case study, answer the questions given after the case study, you may use other references to support your arguments:

1.     Introduction

Internet Health Technology Network (IHTN) was the idea of Peter Goodwood.  Peter was an entrepreneur that had both the ideas and the motivation. This primary idea was to connect all medical practitioners through an electronic network like the Internet, to the different medical aid companies.  IHTN would then act as the intermediary and develop and maintain the network.   This value added network (VAN) would benefit both the medical practitioners as well as the medical aid companies.  It would, therefore, present a win-win situation for all involved.

The idea was that medical practitioners would subscribe to the IHTN VAN and pay an annual fee plus a transaction fee of 1% of the transaction value.  They would then be able to submit claims electronically to the various medical aid companies reducing the turn-around time between submitting a claim and receiving payment from 30 days to 48 hours.  It would also reduce the amount of administration for the medical aid companies, as claims would only be captured once.

2.     Project background

IHTN approached various large IT companies to develop the system for them but few were interested due to their lack of business history and financial resources.  They eventually approached ISM South Africa, an international IT company with a good reputation and many years of experience.  Some of the executives of ISM were impressed with the idea and suggested a partnership where ISM would act as both the venture capitalist and IT partner.  ISM would "loan" IHTN the money and when the project was completed and IHTN started generating profits, the capital loan would be paid back.  IHTN only had to invest a small portion of the initial capital.  This they intended getting from external venture capitalists or from buy-in from the medical practitioners.  The partnership agreement was referred to the legal representatives of both parties.  As this was a very innovative project with extraordinary circumstances, it was going to take some time to come up with a contract that suited both parties. As there was talk that another company had started working on a similar system, timing was critical and the project started hastily without any contracts or agreements being finalised.  The project had to be completed in nine months if it was to beat the competition.

IHTN was based in Pietermaritzburg and ISM in Sandton, some five hundred kilometres apart.  IHTN consisted of five employees of which three made up the board of directors.  They had known each other for some time and together decided to resign from their jobs and start the IHTN venture.  It was decided that John, one of the directors, would commute to ISM's offices and handle all project-related issues.  Peter, another director, focused on the marketing side by visiting the medical practitioners and the medical aid companies through the whole of South Africa.  Frank, the third director, managed the IHTN office with two administrative assistants.

3.     Project initiation

As ISM had a large stake in the project, it was decided that they would provide a professional project manager for the job.  Roy had 20 years of project management experience in the IT industry and was a Project Management Professional (PMP).  He had worked on some of ISM’s largest and most complex projects and had a good success rate.   He was familiar with the ISM project management methodology and also the PMBoK.

The IHTN project was very different to most IT projects that ISM had been involved in before, in that ISM was both the IT partner and project sponsor.  Furthermore, there were many external stakeholders involved, like the medical practitioners, medical aid companies and medical and dental councils.  The project was driven by IHTN which was an entrepreneurship based around an information system.  At that stage, IHTN was not a legal entity, as they had not yet been registered as a company.

The ISM executives issued a project charter, which signalled the start of the project.

During the initial workshop it was quickly established that, although John had a bit of an IT background, it was not enough to be able to give clear specifications.  As this was an innovative project, no one was sure how or what had to be done.  John had an idea of what the system should be able to do but confessed that detailed requirements would only become available after Peter spoke to the different practitioners to find out what their problems were with the existing manual system.

The project was broken up into the following sub-projects:

1. Business Processes Engineering (BPE)

2. IT Architecture (ITA)

3. Software Development (SWD)

4. Hardware Acquisition (HWA)

5. IT Infrastructure / Network (ITI)

A sub-project team was created for each area and sub-project managers were appointed based on availability rather than project management knowledge or skill.  Many of them had no experience in the field of IT project management.

The overall project team consisted of approximately 300 people.  As this was the first time a project of this proportion was being undertaken by such a large team, an external project manager, Randall (specialising in large IT projects), was brought in as assistant project manager.

4.     Project execution

During the project workshop that followed, the idea was expanded upon and some basic requirements were stated by IHTN.  Each sub-project team had to report back its recommendations within one week.  Each sub-project manager had to develop a sub-project plan using the Work Breakdown Structure (WBS) method with estimates for the duration and cost of each activity.  Each sub-project plan also had to include a resource histogram to establish the resource requirement for each sub-project.  The project manager, Roy, would then consolidate all the sub-project plans into one project plan, which would then be presented to IHTN and the ISM executives.

During this time, the different sub-project managers were frantically recruiting team members internally and wrapping up other projects.  The five sub-project managers ended up doing all the planning and estimation without the involvement of their sub-project team members.  Due to the enormous workload, they did not have time to confer with one another and, on the day of the feedback session, it become clear that everyone had different ideas on how to approach the project.  IHTN made it clear that they relied on ISM to recommend and suggest what should be done and how it should be done.

ISM started to create a project management infrastructure by dedicating an empty office to the project, but due to cost constrains, no administrative personnel could be appointed.  The project manager established a control structure within the project where the sub-project managers had to give individual feedback, timesheets and progress reports once a week.  A basic change control procedure was also established supported by the necessary documentation.  A basic risk management process was also formulated, which would serve to identify, analyse and manage risks.  After two more weeks the project started to take form and the teams were taking shape.  IHTN started to achieve a better understanding of what they wanted and were able to provide more detailed requirements.

According to the control structure, feedback was given diligently to the project manager once a week, but there was no formal communication between the teams.  The Business Process Engineering team spent most of the time at the IHTN offices modelling the business processes, which meant that they were not available for meetings.  The IT Architecture/Network team started to develop an architecture, but without considering the business processes or software to be used, as this information was not yet available.  All the sub-project teams functioned independently from one another and little information was shared.  There was no form of document management system as the project office was unmanned.  No one knew what documents were produced by which teams and everyone continued as if they were doing the project on their own.

5.     Project expansion

After a month of talking to the medical practitioners, IHTN realised that information security would play a very important role in selling it to them.  An Information Security sub-project was quickly established and a sub-project manager was appointed.  Unfortunately, this sub-project manager was not immediately available and could only join the project two weeks later.  At this point, the systems design was almost complete and some initial development work had already started.

IHTN also realised that all the medical practitioners would require training as many of them only had basic computer skills.  As they were distributed throughout South Africa, an innovative training method was required.  It was eventually decided to use Computer-Based Training and another sub-project was created.  This was outsourced to an external company, as there were no in-house resources or knowledge to run this sub-project.

The need for a helpdesk was also identified, so yet another sub-project was created to develop and implement a helpdesk.  This was outsourced to Lotus, which had just become a strategic partner of ISM.

As these three new sub-projects did not exist at project initiation, the rest of the project team had some difficulty accepting them as part of the team.  Many recommendations made by these teams were ignored or downplayed as the rest of the team felt that they knew better as they had been there from the start.  The new people, on the other hand, questioned the work that had already been done up to that point as they felt there were some critical issues that had not been addressed.

The Software Development team opted for the Lotus Notes platform and some contractors from Lotus were brought in to help with the development work.  This was a directive from the ISM executive team as Lotus has just become a strategic business partner.  As this was a very sudden directive, the only Lotus contractors that were immediately available were relatively inexperienced and had only recently completed a course in Lotus Notes development.  The development team consisted of members from both ISM and Lotus.  It was decided a prototyping approach should be followed, as IHTN could not provide detailed requirements at the start.  Initially, the team members could not agree on how to go about the development but later came to a consensus.  One of the main reasons for this was that ISM and Lotus had previously been competitors and now suddenly had to work together.  There was a lot of initial one-upmanship in the development team.

6.     Project challenges

During one of the monthly progress meetings, some crucial issues were raised which threatened the continuation of the project.

Two months since the start of the project and no contract has yet been signed.  The legal teams were still in disagreement as to the exact details of the contract.  As long as no contract was signed, IHTN could not be billed for any work done.  The project was therefore not generating any income, which caused some problems for team members when it came to their annual performance appraisals as these we based on set income targets.

The ISDN line required to link the various databases in the different regions could take up to 12 months to become available.  Telkom had a long waiting list of requested services and there was no other telecommunications provider.

IHTN was not satisfied with the price of the recommended ISM PCs and opted for another well-known vendor’s workstations.  These third-party products were only marginally cheaper but were untested in terms of the rest of the recommended architecture.  This meant an additional risk to the project that could have a huge impact on it if it realised.

As security was to play an important role, the project manager had appointed a third party to review all information security work carried out.  The appointment was made without the involvement of the Information Security sub-project manager.  The Information Security sub-project manager was not very happy with this as he felt the project manager had no confidence in his abilities.  The project manager explained to him that security was very important and that quality control had to be conducted.  He finally accepted this explanation but was not happy about it.

As no clear project roles were identified in the beginning of the project, some of the over-ambitious sub-project managers started exploiting and abusing team members from other teams.  Some of the work packages were given to other teams, which was not their direct responsibility.  This lead to some team members working 10-12 hour days while others seemed to be taking it easy.  This created a lot of tension and unhappiness with many team members.  As there was no formal way of airing grievances, it took some time before the project manager became aware of this practice.

A new time recording system was implemented in ISM and everyone had to attend the training course.  Many team members felt this was a waste of time but had to go anyway.  This was not originally planned for and caused additional delays.  The new time recording system was also very comprehensive and completing weekly time sheets took up to four hours.  More time was wasted that could have been spent on the project.

The logistical requirements of the project started to take its toll on John.  All the sub-project teams wanted to meet with John to get clarification on system issues and to give feedback and make recommendations.  As John alone was responsible for the project, a backlog was created in getting an appointment to see him.  Meetings had to be scheduled two weeks in advance and many got cancelled minutes before they were to commence due to a crisis somewhere else.  This led to a lot of frustration and delays for some of the sub-project teams.  Many of the documents produced had to be signed off by John before work could continue.  As John was very busy, many documents remained unread and therefore unapproved for weeks.

Many of the sub-project team leaders complained to Roy about this as it was starting to impact on their schedules.  Roy realised that the project could never be completed this way so he had to find a solution.  Roy discussed the problem with John and together they came up with the following arrangement.  All documents had to be returned signed by IHTN within 48 hours or the document would be accepted as read and approved.  This eased some pressure on the sub-project teams but placed even more responsibility on the shoulders of the already overworked John.

The developers were under a lot of pressure as this was a very innovative project.  As the Information Security team came into the project late, their analysis showed that there were some serious security vulnerabilities in the design.  They requested that some of the initial development work be redone to accommodate these essential security services.  The developers were not very receptive to these changes as it meant a lot of rework and also some redesign.  It also became clear that many of the developers did not understand the need for information security and got involved in heated arguments with the Information Security sub-project team.  The relationship between the Information Security team and the development team deteriorated to the point where neither party was prepared to talk to the other, and all communication had to be relayed through the project manager.  This placed a huge burden on the project manager, as these two teams had to work together.  The sub-project manager for the development team was trying very hard to defend his team and was also clearly not supportive of the Information Security team.  Despite the pretence of working on improving the relationship between the two teams, this never happened.

The marketing efforts of Peter were going well with most of the medical practitioners showing interest in the system.  Despite this interest, very few were prepared to invest any capital in such a service.  Most adopted a wait-and-see attitude.  In the past, there had been too many similar schemes with many practitioners getting their fingers burnt.  It had also become clear that there were additional stakeholders involved that were not identified at the start of the project.  The different medical councils had their own requirements based on policies, and some legislation had not been taken into account.  As money was to be transferred online, the banks had to be involved and they also had their own requirements and standards.  It would appear as if only the tip of the iceberg had been scratched in terms of system specifications.

Many of the team members become despondent and felt that there was no way this project would be completed in nine months.  IHTN was not prepared to delay the project so the original specifications were renegotiated.  It had also become clear that the original estimates were far too low and that halfway through the project, the budget was almost spent.  Some friction started to develop between the sub-project teams regarding whose work was most crucial to the project.  The sub-project teams started competing with one another for the remainder of the budget rather than working together.

7.     Project closure

The project manager knew something had to be done.  He called an urgent meeting, which all team members had to attend.  Only half the team members showed up as the rest were too busy working on the project or were not close to the ISM offices.  At this meeting feedback was given on how well the project was going and what good progress was being made.  John also said a few words and thanked everybody for their support and effort.  Despite this, very few team members felt encouraged or motivated.  Many of the problems raised during the beginning of the project had still not been resolved.  The project manager also announced that he would be on leave for two weeks and that Randall would take over from him for that period.

Randall was a good project manager but was unfamiliar with the way things worked at ISM.  He was also reluctant to make decisions on Roy’s behalf and tried to postpone all important decisions until Roy returned.

During the following two weeks, top management made a strategic business decision to restructure the whole of ISM and some of the sub-project leaders were put in different positions in different departments within the organisation.  A decision had to be made by them to either stick with the project and decline the new position or take up the position and scale down involvement with the project.  As many people already felt the project was going to fail, they deserted the project like rats would a sinking ship.  This was a major blow for the project and a week later the project manager called another compulsory meeting.  At this meeting it was announced that the project would be put on hold for a while, until the contracts had been finalised.  All team members were also encouraged to become involved in other projects, in the meantime, as the delay could be indefinite.

The next day the project was cancelled and Randall informed everyone of the decision via email.

8.     Conclusion

Despite the fact that the project manager had extensive experience in project management, the innovative nature and size of the IHTN project made it a difficult one.  Due to the urgency of the project, little time was spent on the planning phase.  It also turned out that ISM had a very good in-house project management methodology that was not applied to this project.

Many of the ISM staff that had worked on the IHTN project left the company within the following six months.  Soon afterwards the whole department was closed down.

Answer the following questions:

a. Discuss five major events that caused this project to be cancelled. [20 marks]

b. How was the project team structured? Discuss 5 problems associated with the project organisation used? [20 marks]

c. Discuss five challenges faced by John from IHTN. [10 marks]

Kind Regards

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