

ST. XAVIER'S COLLEGE

(Affiliated to Tribhuvan University)

Maitighar, Kathmandu



Case Study Report

on

Software Engineering (ITC 225)

At

Bent Ray Technologies Pvt. Ltd.

Under the supervision of

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Lecturer

Submitted by

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Submitted to

ST. XAVIER'S COLLEGE

Department of Computer Science

Maitighar, Kathmandu, Nepal

June ____, 2015

Case Study Report
On
Software Engineering

A case study report submitted in partial fulfillment of the requirement for
the degree of Bachelor of Information Management

Submitted by

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CERTIFICATE OF APPROVAL

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ABSTRACT

Rapid growing technology challenges us in many different ways, accepting those challenges there has been a lot of research from past to till dates. People are expecting fast smooth, reliable, quality on their usability. Software engineering is also the most popular and rapid growing technology.

This Case Study is related to the Software Engineering. People are not well familiar regarding these factors. Country like Nepal this would be the best invention and good staring. The aim of this report is to illustrate the project's subject matter, background of some companies, how these companies are using software development for their and users benefits. And our main focus was on software development life cycle and its model.

This report would be much beneficial for organization and individuals interested in software development and its applications.

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ABBREVIATION

IT	:	Information Technology
SDLC	:	Software Development Life Cycle
OS	:	Operating System
KB	:	Kilobyte
E-MAIL	:	Electronic Mail
IBM	:	International Business Machine
UNIX	:	Uniplexed Information and Computing Service
ERD	:	Entity Relationship Diagram
MIS	:	Management Information System
DSS	:	Decision Support System
TPS	:	Transaction Processing System
OAS	:	Office Automation System
GIS	:	Geographical Information System
IDEs	:	Integrated Development Environment

CHAPTER 1

1.1 Background of the Study

Software engineering focuses completely on software. Throughout their four years of university education, computer engineering students learn about the general design, creation, and maintenance of system as well as application software. With a deep focus on software algorithms and coding, this branch of engineering is certainly challenging and fun if you have a deep interest in, and passion for, computers.

Not everybody who dives into computer engineering manages to become a successful professional. Due to this, the very image of computer engineers has become a bit tarnished as far as Nepal is concerned. So, before deciding to study computer engineering, a student must think deeply about his/her interests and aptitude.

Computer engineering as a field is always evolving and changing. Unlike the more traditional branches of engineering, which change very slowly and are more or less static, computer engineering is extremely dynamic. So, it is a field for innovators and thinkers. So, if you want to ride the technology train; if you desire to make a difference; if you have an ambition to become an innovator, computer engineering is definitely the path for you.

Mostly computer software engineers apply the principles and techniques of computer science, engineering and mathematical analysis to the design, development, testing and evaluation of the software and the system that enables computer to perform their many application.

The Bureau of labor Statics definition is research design, develop, and test operating system, compilers and the network distribution software for medical industrial military, communication, aerospace, business, scientific and general computing applications.

CHAPTER 2

2.1 Background of the Company

Bent Ray Technologies is an IT company based in Nepal. It has already emerged as the fastest growing company in Nepal to provide quality IT solutions and outsourcing services. The company is promoted by innovative IT professionals, expertise manpower and a pool of unmatched talent. At Bent Ray Technologies, we deliver superior IT concepts and solutions for the competitive market.



Figure 1: Logo Bent Ray Technologies Pvt. Ltd

We are a process driven company committed to provide strategic, dynamic, reliable and secure solutions to our clients. We built a good return on investment (ROI) for our clients. We understand the value of QTC-Quality, Time and Commitment. We have our own tested methodology for development. We breakdown the task into smaller units and concentrate on every aspect of the product. We have always invested on updating our technical manpower to the recent tools of development. We often provide training to the new technologies.

2.1.1 Vision of Company

To establish an IT company which provides topnotch IT services to Nepal and offshore.

2.1.2 Goal of Company

To establish a team of qualified, dedicated and workaholic professionals which can provide strategic visioning and can pay our client good Return-Of-Investment.

2.2 Objectives of Company

- To provide complete solutions related to Information and Communication Technologies

- To work as consultant in software and hardware development, its maintenance, desktop publishing and web designing, network development and management.
- To develop quality software's that ease the daily transactions of corporate houses
- To provide training and mentoring and carry out research in above listed domain

2.3 Introduction to Software Engineering

Software engineering is the study and an application of engineering to the design, development, and maintenance of software. The Bureau of Labor Statistics' definition is "Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications."

Typical formal definitions of software engineering are:

- "the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software";
- "an engineering discipline that is concerned with all aspects of software production";
- And "the establishment and use of sound engineering principles in order to economically obtain software that is reliable and works efficiently on real machines."

Under the subject of software engineering the word came is "System", a system can be defined as any set of objects and ideas, and their interrelationships which are ordered to a common goal or purpose. For example, an organization is a system and the parts like division, departments units etc. are subsystem. System is a group of interacting interrelated or interdependent elements forming a complex whole and behaving as if a single unit.

There are several of types of Information Systems used in the concept of software development.

- Management Information System (MIS).
- Decision Support System (DSS).
- Transaction Processing System (TPS).
- Expert System.
- Office Automation System (OAS).
- Geographical Information System (GIS).

2.4 System Development Models

There are various methods and techniques that can be used to direct the life cycle of a software development project. System development models specify how the activities of development process are organized in the total system development effort. Each model is designed for a specific purpose or reason that follows a particular life cycle but each may have similar goals and common task. Every model has some advantages and limitations, no model is perfect. Some popular system development models are discussed below.

2.4.1 Waterfall Model

The waterfall model describes a system development method that is linear and sequential in nature following gradually downwards similar to waterfall. Once a phase of development is completed the development proceeds to the next phase and never turns back.

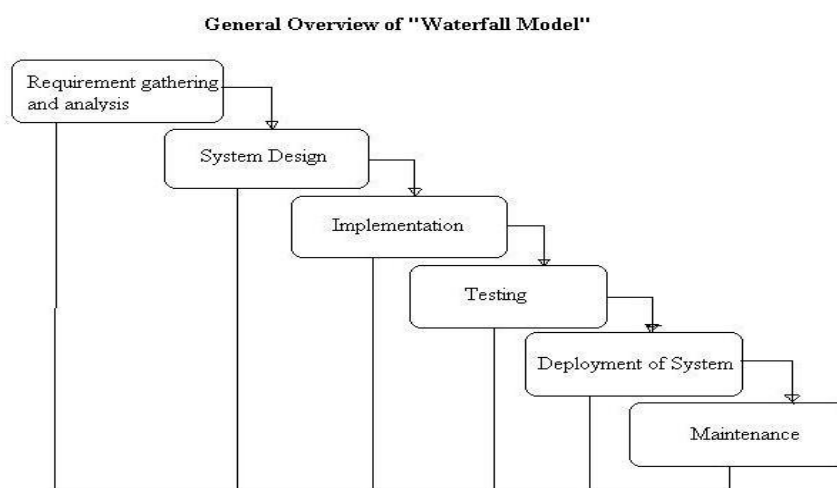


Figure 2: Waterfall Model

This model is easy to use and understand. It provides guidance even to novice users. Each phase proceeds in strict order without overlapping. Disadvantage of this model is that it does not allow revision of the previous phase after shifting to the next phase. For example Requirement analysis cannot be performed after reaching system design phase.

2.4.2 Prototype Model

A prototype model is an early approximation of final system or product. In this model, a prototype is developed instead of developing the full working model. This model is used in systems where requirements are not known in detail during development. It is a trial and error process that allows for more accurate, flexible design and development. It is cheaper than other models.

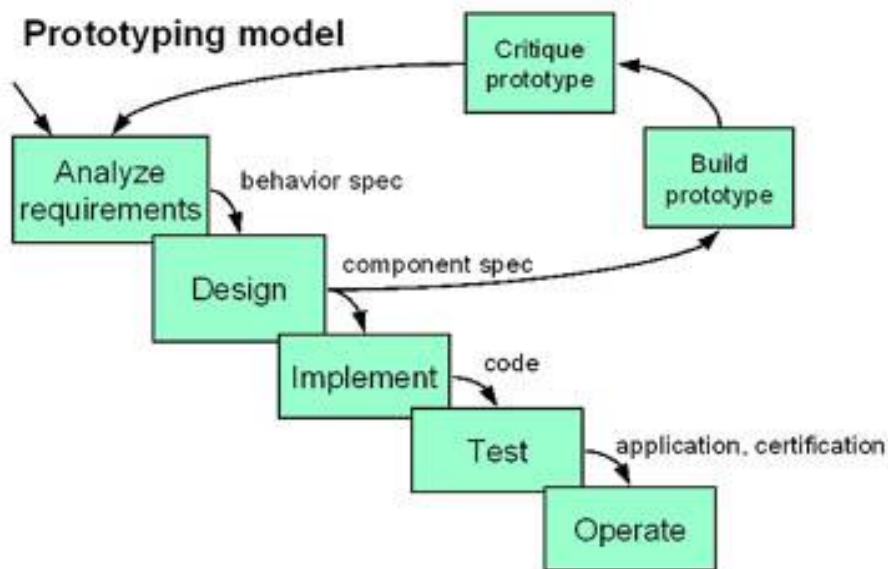


Figure 3: Prototyping Model

This model is applied when there is an absence of detailed information regarding user in software.

2.4.3 Spiral Model

Spiral model is a combination of waterfall model and prototype model, this model is used for large, expensive and complicated projects because where proper risk assessment is essential. Users can see the systems early because of rapid prototyping feature. It can be complex for small projects. Spiral model is developed by Barry

Boehm in 1986. Each iteration of the prototype is represented as a cycle in the spiral. This model is risk oriented and comprises the features of the prototype and the waterfall model.

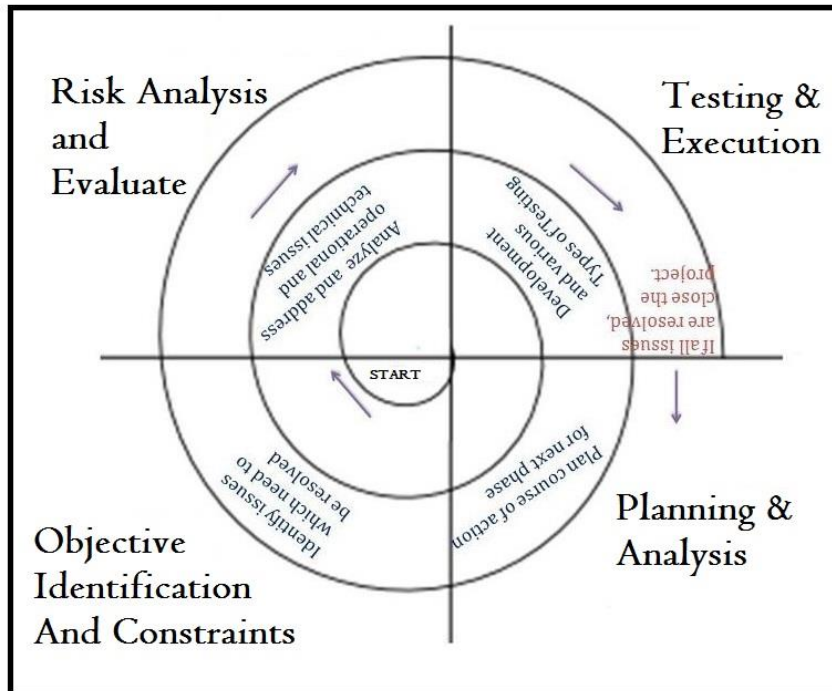


Figure 4: Spiral Model

This model is used for large, expensive and complicated project because of where proper risk assessment is essential. Users can see the system early because of rapid prototyping feature. However, risk evaluation may take longer time in the system development process.

2.4.4 Iterative Model

Iterative and Incremental development is any combination of both iterative design or iterative method and incremental build model for software development. The combination is of long standing and has been widely suggested for large development efforts.

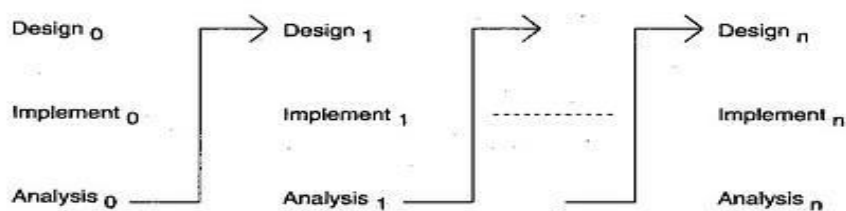


Figure 5: Iterative Model

2.5 System Development Life Cycle

Similar to other system, an Information System must be developed and maintained to satisfy the changing requirements of the organization. Most organizations have a formal system development phases but it may differ from one organization to another. A common system development may follow the following cycle of phases.

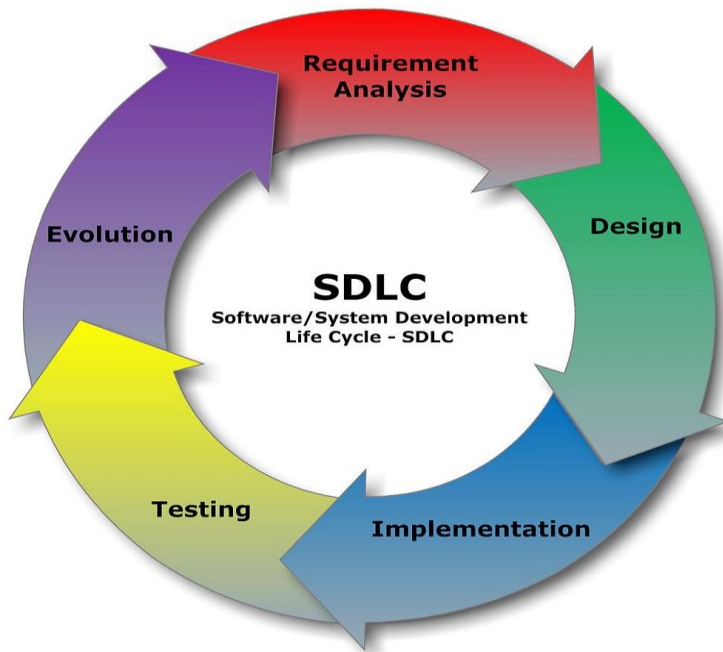


Figure 6: SDLC Phases

2.5.1 System Study

This is the first phase of system development process which is also known as system initiation phase every system projects should be careful planned because they are usually complicated and are used in sensitive Areas as such as payroll, inventory accounting etc. of the organization they serve.

2.5.2 System Analysis

System Analysis is the study of a problem domain in order to recommend improvements and specify requirements and priorities to achieve the solution. This phase focuses on more detailed understanding of the problem. It has 3 sources Existing Sources, Internal Source, External Source

2.5.3 Feasibility Study

Feasibility is the measure of how beneficial or practical a system will be to an organization. Feasibility study is the process by which feasibility is measured. It has following areas. Operational Feasibility, Technical Feasibility, Economic Feasibility, Schedule Feasibility

2.5.4 System Design

The best alternative solution chosen by feasibility study is put for system design This phase develops the technical blue prints and specification required to implement database, programs, user, interfaces and networks for the information system.

2.5.5 System Development

The design framework by system design phase is now placed for development using appropriate programming language and necessary hardware.

2.5.6 System Testing

System testing is the process of analyzing the system with the intension of finding errors. This phase is the most complex and time consuming among other phase.

There are several types of testing systems

1. Black Box Testing
2. White Box Testing

2.5.7 System Implementation

System Implementation refers to putting the tested system into operation. The main component of every system is people, tanning or education should be given as per need of the system users

2.5.8 Maintenance and Review

After bringing the system into practice for a reasonable period of time the users may face various difficulties or new errors. There is need of system maintenance and review.

2.6 System Analyst

A system analyst is a specialist involved in system analysis. The system analyst studies the problems and needs of an organization to determine how people, data, processes and information technology can best accomplish improvements for an

organization. An analyst is also involved in analyzing, designing implementing and evaluating computer based information system to support the decision making and operational of an organization. In an organization, some people are technical while some are no technical. This different brings a communication gap between those who need computer based solutions and those who understand information technology. A system Analyst can be compared with an architect. An architect studies the needs and goals to design a building by interviewing a client.

2.7 System Development Tools

2.7.1 System Flow Chart

System flow char is a diagrammatic representation to explain how a system works. Diagrammatic representations easier to understand than a lengthy text. System flow chat is one of the major tools of the system analyst to show an overview of the processing in a complete system.

2.7.2 Entity- Relation ER Diagram

Entity Relation Diagram shows data in terms of the entities and relationships described by the data. An entity is anything in real world system that can be uniquely identified. It can be a set of person, place, objects, events or even concepts. For example students can be an entity. Every entity instance, which is every student can be recognized by their registration number or citizenships number among other students.

2.7.3 Context Diagram

Context diagram is a diagram that represents the actors outside a system that could interact with the system it represents system as a whole and its inputs and outputs form or to external factors. It is useful system design to represent external factors interacting with the system itself so that system requirement and constraints can be studied very easily. It is also used to document the scope for a system. The symbol used in a context diagram is tabulated below.

2.7.4 Data Flow Diagram (DFD)

Data Flow Diagram (DFD is a tools that describes the flow of data thorough a system and the work or processing performed by that system. It shows that flow of data from external entitles into the system, how the data moves form the one process to another

and its logical storage. Before drawing DFD. It is a good practice to the draw context diagram.

2.7.4 Unified Modeling Language (UML)

UML stand for Unified Modeling Language. It is slandered language for specifying, visualizing, constructing, and documenting, the software systems, as well as for business modeling. The UML is very successful as it. Such as Microsoft, Oracle etc.

2.7.5 Use Case

A use case is the set of scenario that describe an interaction between a user and a system. It is comparatively easier type of UML diagram to draw. It displays the relationship among actors and use cases. The two main components of a use case diagram are user case and actors.

2.8 Technologies Used by Company

Most of the software developers of Bent Ray are acquainted with the latest technical knowledge and are capable of switching their technical platform easily in the short span as per the requirements. Bent Ray is successful enough to develop products in different technical environments. Some of the technologies we are acquainted with are as follows:

1. Development Platform: C, C++, Visual Basic, Visual C++, JAVA, VB.NET, C#.NET
2. Web Based Development Platform: PHP, ASP, ASP.NET, JSP, ColdFusion
3. Database: Oracle, SQL Server, MySQL, SyBase, PostGRE
4. SSReporting: Crystal Report, iReport, MS Data Report

Mostly they are using PHP storm to develop all the software's and web applications

2.8.1 What is PHPStorm?

JetBrains PhpStorm is a commercial, cross-platform IDE for PHP built on JetBrains' IntelliJ IDEA platform. PhpStorm provides an editor for PHP, HTML and JavaScript with on-the-fly code analysis, error prevention and automated refactorings for PHP and JavaScript code.

PhpStorm is built on IntelliJ IDEA, which is written in Java. Users can extend the IDE by installing plugins created for the IntelliJ Platform or write their own plugins.

All features available in WebStorm are included in PhpStorm, which adds support for PHP and databases. WebStorm ships with pre-installed JavaScript plugins (such as for Node.js), which are available for PhpStorm as well at no cost.

2.8.2 Security Software

Security software is any computer program designed to enhance information security.

The defense of computers against intrusion and unauthorized use of resources is called computer security. Similarly, the defense of computer networks is called network security.

2.8.3 System and Software Security

As computing systems become more essential to our daily lives, it becomes ever more important that the services they provide are available whenever we need them. We must also be able to rely on the integrity of the systems, and thus the information that they hold and provide. What is more, our society and our economy depend upon certain pieces of information being held in confidence.

We want to be assured that they will work exactly as expected, and that they will keep working – even in the face of disasters, accidents, or deliberate attempts to interfere with or prevent their function.

Achieving and maintaining security is a complex, interdisciplinary challenge. We must consider not only the software and hardware components of a system, but also the way in which these relate to the human processes and physical constraints of the real world. A modern security professional needs to understand principles of architecture, design, management, interoperability, and evolution, and to apply them effectively in a world of rapidly-changing technologies and expectations.

The Software and Systems Security Programme at the University of Oxford teaches these principles and their application. It offers a flexible programme of short courses to those working full time in industry or in the public sector. It addresses a wide range of subjects – from service architectures to forensics, from trusted platforms to risk analysis, and from human factors to incident management. It is accessible to anyone with the right combination of previous education and practical experience.

The courses on the Programme can be used as individual programmes of professional training in specific subjects, or as credit towards a Master of Science (MSc) degree in

Software and Systems Security from the University of Oxford. Students on the MSc take between two and four years to complete a minimum of ten courses, typically at a rate of three courses per year, earning a degree while in full time professional employment. The courses may be taken in any order and combination, depending upon previous experience and education.

Each short course is based around a week of intensive teaching in Oxford, with some initial reading to consider beforehand, and a six-week assignment to complete afterwards. The teaching week allows you the chance to explore a subject in depth, with expert teaching and supervision, away from the demands of work and family. The reading gives you the opportunity to prepare yourselves; the assignment, an opportunity to deepen and to demonstrate your understanding.

1. Security Principles (SPR)
2. Secure and Robust Programming (SRO)
3. Trusted Computing Infrastructure (TCI)
4. Design for Security (DES)
5. Security Risk Analysis and Management (RIS)
6. People and Security (PAS)
7. Network Security (NES)
8. Cloud Security (CLS)
9. Data Security and Privacy (DAS)
10. Mobile Systems Security (MSS)
11. Security in Wireless Networks (SWN)

CHAPTER 3:

3.1 Literature Review

The aim of this project was to know the essence and aspects of software engineering and software development in various real world organizations. We chose “Bent Ray Technology” as our study matter. In this organization we consulted with system supervisor to know the implementation of various technologies and the future development of software system in this organization. For this, we prepared questionnaire and also researched over this matter using various resources.

Moreover, we would like to express our sincere gratitude to staff working there as they helped us to discuss real world problem while implementing software develop system in their organization such as deadlocks and starvations. This really allowed us to know and experience practically what it feels like to work in real world situation.

3.2 Research Methodology

Research can be defined as a process of steps used to collect and analyze information to increase our understanding of a topic or issue. It consists of three steps: Pose a question, collect data to answer the question, and present an answer to the question. The techniques and the guidelines which we use to collect, store, research, analyze and then to write report is coined as **research methodology**. All these are a part of our research on the case study of Software Engineering at **Bent Ray Technologies**. Following are the procedures of our research methods and data collection and observation to find the concrete evidence.

3.3 Interview

An **interview** is a conversation between two or more people where questions are asked by the interviewer to elicit facts or statements from the interviewee. The qualitative research interview seeks to describe and the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say.

Interviewing, when considered as a method for conducting qualitative research, is a technique used to understand the experiences of others. Interviewing differs from other methods of data collection in that it is often more exploratory in nature, and allows for more flexibility. Thus interviewing is most effective when the goal of said research is to gain insight into the “subjective understanding” of those around us. By asking participants “why” we are enabled to not only observe their behavior but to subsequently understand the meaning that underlies that behavior, and to have this meaning explained to us in the participant s own words.

3.4 Questionnaire

A **questionnaire** is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are

often designed for statistical analysis of the responses, this is not always the case. The questionnaire was invented by Sir Francis Galton.

Questionnaires have advantages over some other types of surveys in that they are cheap, do not require as much effort from the questioner as verbal or telephone surveys, and often have standardized answers that make it simple to compile data. However, such standardized answers may frustrate users. Questionnaires are also sharply limited by the fact that respondents must be able to read the questions and respond to them. Thus, for some demographic groups conducting a survey by questionnaire may not be practical.

3.5 Field research

Field research or **fieldwork** is the collection of information outside of a laboratory, library or workplace setting or in our case the IT department of Bent Ray Technologies. The approaches and methods used in field research vary across disciplines. Field research involves a range of well-defined, although variable, methods: informal interviews, direct observation, participation in the life of the group, collective discussions, analyses of personal documents produced within the group, self-analysis, results from activities undertaken off- or on-line, and life-histories. This is all to get the firsthand experience of software development at the Bent Ray Technologies.

When conducting field research, keeping an ethnographic record is essential to the process. Field notes are a key part of the ethnographic record. The process of field notes begin as the researcher participates in local scenes and experiences in order to make observations that will later be written up. The field researcher tries first to take mental notes of certain details in order that they are written down later.

3.6 Internet

The resource “INTERNET” is used to further broaden our vision, knowledge, idea and experience on the case. It not only acts as the powerful source to help us understand the software engineering and software development as well as to create the simplified report to be understandable by the commoner. It is an unlimited source of information and ideas which serve to facilitate the case of our study.

3.7 Objectives of the Study

This is case study produced in relation to our 6th Semester group project “Software Engineering”. This document covers the details of our findings and implementation of our work regarding various software development and its applications. Software engineering is the study and an application of engineering to the design, development, and maintenance of software.

- To improve in design and interactive debugging.
- To identify applications of subjects software engineering.
- To identify different type of the products or services provided by the development company.
- To find the procedures of developing application for mobile, desktop, enterprise.
- To know how the companies, industries and institutions are implementing software development life cycle phases.
- To identify the IDE, frameworks and build tools used for creating and developing software’s and applications.
- To understands user’s conceptual model and development of better specifications.

3.8 Significance of the Study

This case study report discloses the application of “Software Engineering” and software development in the Nepali companies and industries. This report will be helpful to identify how the organization is working and how they are getting benefits from these subjects, how the software development technologies on these subjects are developing. Mainly this report will help in the field of software development, we have done the research on the basis of real world situation and this data will help to get the knowledge about process, tools and methods of software development. Mostly this report is very useful for students like us as we got unforgettable experiences.

3.9 Limitations of the Study

- Half of our study was based on the secondary data.

- Since the case study period was short, due to lack of time the detailed and elaborated study was not done.
- As being student, there is no full accessibility with the system mechanisms of the organization, hence requirement analysis and other required analysis become insufficient.
- Organization has its own rules and regulations binding inside these, with limited accessibility have to work under their keen supervision.

3.10 Integrated Development Environment

An integrated development environment (IDE) is a programming environment that has been packaged as an application program, typically consisting of a code editor, a compiler, a debugger, and a graphical user interface (GUI) builder.

1. NetBeans
2. Eclipse

3.10.1 NetBeans

NetBeans IDE is a free Java IDE (Integrated Development Environment). It is extensively used by software developers. This is a cross platform Java IDE. With the help of this freeware software developers can build cross platform and professional mobile, web, enterprise and desktop applications. If you are looking for a free and useful Java IDE for creating Java based applications then you will find this software very useful.

3.10.2 Eclipse

Eclipse is a free Java IDE for developers and programmers. It lets you create various cross platform Java applications for mobile, web, desktop and enterprise domains. Its main features are Window Builder, integration with Maven, Mylyn, XML editor, Git client, CVS client, PyDev, Subversive - SVN Team Provider etc. It lets you provide various types of packages for software development.

3.11 Company Uses SDLC

Company uses default software development life which have different phases to develop any software. The development cycle has phases like System Study, System Analysis, Feasibility Study, and Design Testing & Maintenance.

System Study: The person who is appointed for system study and problem study will study about system and problems.

System Analysis: The System analyst will do research on system requirement and problem requirement.

Feasibility: The system analyst will also research on feasibility study, in this the time requirement, economical, technical and operational requirement will be concerned.

Design, Development and Testing: The designer will design the system design, the software developer will develop the software and finally tester will test the system it is working or not.

Maintenance: This phase will remain again and again after every cycle.

3.12 Model Used by Company

The most popular development model they are using to develop any software, they are developing premium software as per their customer requirement. They don't develop freeware software for general use.

The Agile model is most popularly they are using. There are lots of models to do work like Waterfall, Prototype, Spiral and Iterative Model these all are the one of the best and oldest models which are used to develop any software or system.

3.12.1 What is Agile?

Agile software development is a group of software development methods in which requirements and solutions evolve through collaboration between self-organizing, cross-functional teams. It promotes adaptive planning, evolutionary development, early delivery, continuous improvement, and encourages rapid and flexible response to change.

The Manifesto for Agile Software Development, also known as the Agile Manifesto, first introduced the term agile in the context of software development in 2001.

The development model life cycle of agile development model is given,

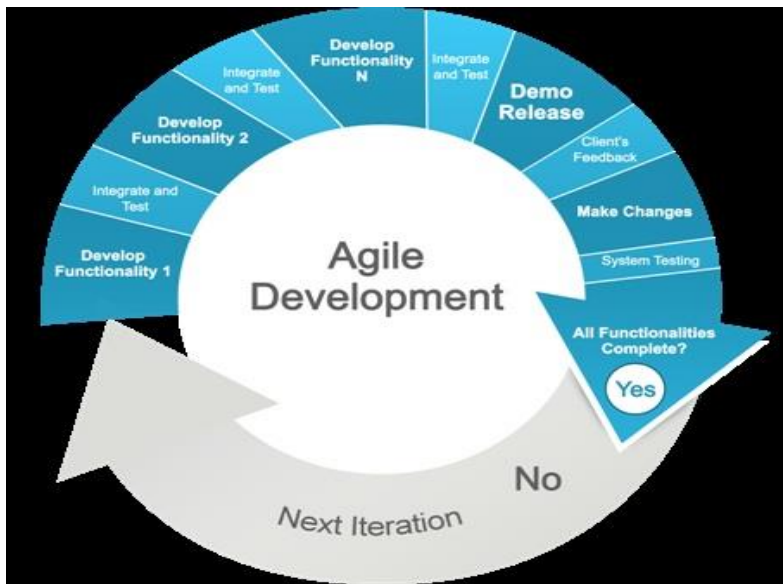


Figure 7: Agile Development

Advantages of Agile model:

- Customer satisfaction by rapid, continuous delivery of useful software.
- People and interactions are emphasized rather than process and tools. Customers, developers and testers constantly interact with each other.
- Working software is delivered frequently (weeks rather than months).
- Face-to-face conversation is the best form of communication.
- Close, daily cooperation between business people and developers.
- Continuous attention to technical excellence and good design.
- Regular adaptation to changing circumstances.
- Even late changes in requirements are welcomed

Disadvantages of Agile model:

- In case of some software deliverables, especially the large ones, it is difficult to assess the effort required at the beginning of the software development life cycle.
- There is lack of emphasis on necessary designing and documentation.
- The project can easily get taken off track if the customer representative is not clear what final outcome that they want.
- Only senior programmers are capable of taking the kind of decisions required during the development process. Hence it has no place for newbie programmers, unless combined with experienced resources.

3.12.2 When to use agile model:

- When new changes are needed to be implemented. The freedom agile gives to change is very important. New changes can be implemented at very little cost because of the frequency of new increments that are produced.
- To implement a new feature the developers need to lose only the work of a few days, or even only hours, to roll back and implement it.
- Unlike the waterfall model in agile model very limited planning is required to get started with the project. Agile assumes that the end users' needs are ever changing in a dynamic business and IT world. Changes can be discussed and features can be newly effected or removed based on feedback. This effectively gives the customer the finished system they want or need.
- Both system developers and stakeholders alike, find they also get more freedom of time and options than if the software was developed in a more rigid sequential way. Having options gives them the ability to leave important decisions until more or better data or even entire hosting programs are available; meaning the project can continue to move forward without fear of reaching a sudden standstill.

CHAPTER 4:

Epilogue

4.1 Result

Bent Ray Technologies Pvt. Ltd. provides services software development service. The only one central base of Bent Ray at Lalitpur, Nepal. Bent Ray Technologies takes information from their valuable customers and they will design and develop their needs as a software.

The application of system development is to provide better way to do work on office and it will help to do work fast. By using developed software they will proving better way to communicate with their customers. Development of software is for data and user security

The software development mechanism is SDLC phases and development models. Developer will develop & test software then only software will be released. Those who don't know programming language they can't develop software's.

4.2 Critical Analysis

Bent Ray Technologies Pvt. Ltd. is one of the renowned premium software development company in Nepal. Despite its present height of success, it is seen that it has not yet used as much the common general feature like development and testing of software and long term support with customer. The system structure is defined according to software development phases. System analyst will analyze problem and requirement of software to develop and solve the problem. The employees are basically assigned to develop part of software's and if all the part developed then after they will combine all the parts all together to create one particular software. Company will provide die hard support to their customer because it is the work of software development and maintenance. After the completion of software they will give that software to customer and customer will analyze software, if they found any errors and lack of feature they will ask company to resolve and add new features on that software. If they have their own software engineer they will give software source to

their own engineer. Due to ease of use and fulfillment of their required jobs, Customer will widely go to Bent Ray to develop their own software's.

4.3 Conclusion

This case study was successful experience gaining new knowledge and skills were most achievements. Within this short span of time, various software development activities had been observed and learnt, which taught the significance of relation, leadership traits and other managerial and software development skills.

The greatest thing that was learned during case study is how to accomplished the task doing it in team, how to make best use of internet, how to use of different tools to gain efficiency, how to do code so that are in standard according to coming new technologies.

Finally, internship program has increased skill to communicate and report to those parties in time regarding any kind of issues that are dealt in the organization and buildup the confidence level to work in team and real world projects.

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