NETACODE -A SOFTWARE COMPANY VISITING REPORT

The report is visiting a software company for Course tittle:Information System Design with industrial attachment Sessional Course and Course Code:CSE 3210 in Computer Science and Engineering.

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Systems Concepts and the Information Systems Environment

1.1 Introduction

System analysis and design is a process that many companies use to evaluate particular business situations and develop ways to improve them through more optimal methods.



NetaCode Inc is one of the upgrowing diversified IT solutions Provider Company Registered in as "NetaCode" at Bangladesh in 2018. Later in 2020 it's incorporated as "NetaCode Inc" at Delware, USA.

1.2 NetaCode goal

Netacode goal is simple and one that combines creativity with the latest research and development in the tech world.they are a very customer-oriented company, putting our customers first and always focusing on gaining and deserving the trust of every single one of their customers. So, they listen to their customers, stay at the cutting edge of the latest trends in tech research, and constantly develop better web hosting products and services which enable them to fulfill this vision better and better every day.

To provide trouble-free, customer-focused, reliable, and affordable web hosting services. they simply want to continue to operate a profitable web hosting company that makes customers happy. Since the beginning, they have backed they rock solid hosting solutions and top-notch infrastructure with the best customer service and technical support. A common feeling about the technology field

is it's all about machines, yes, It does take machines but, Host Pair also knows it takes good people to run a well-oiled machine. Yes, a successful business needs to be committed to client solutions, innovation, creativity, and a warm, caring attitude to all of our customers' business needs. We don't just provide 24x7 support. they really do listen and care.

1.3 Characteristic of System

Organization Their organization has a branch in Dinajpur district. Netacode is a multinational software company. Main office in Dhaka in Bangladesh. Their organizations are certainly very beautiful. 4 storied building and their number of rooms is 7.

Interaction It is defined by the manner in which the components operate with each other. For example, in an organization, purchasing department must interact with production department and payroll with personnel department.

Interdependence Interdependence means how the components of a system depend on one another. For proper functioning, the components are coordinated and linked together according to a specified plan.

Integration Integration is concerned with how a system components are connected together. It means that the parts of the system work together within the system even if each part performs a unique function.

Central Objective The objective of system must be central. It may be real or stated. It is not uncommon for an organization to state an objective and operate to achieve another.



Figure 1.1: Task Interdependence in a Computer – Based Subsystem

1.4 Elements of System

Outputs and Inputs

- The main aim of a system is to produce an output which is useful for its user.
- Inputs are the information that enters into the system for processing.
- Output is the outcome of processing.

Processor(s)

- The processor is the element of a system that involves the actual transformation of input into output.
- It is the operational component of a system. Processors may modify the input either totally or partially, depending on the output specification.

control

- The control element guides the system.
- It is the decision—making subsystem that controls the pattern of activities governing input, processing, and output.

Feedback

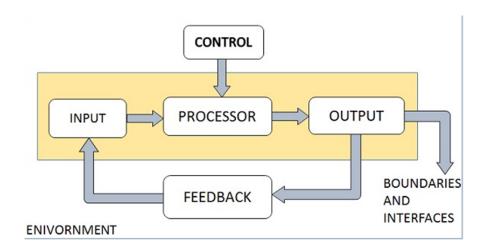
- Feedback provides the control in a dynamic system.
- Positive feedback is routine in nature that encourages the performance of the system.
- Negative feedback is informational in nature that provides the controller with information for action.

Environment

- The environment is the "supersystem" within which an organization operates.
- It is the source of external elements that strike on the system.

Boundaries and Interface

- A system should be defined by its boundaries. Boundaries are the limits that identify its components, processes, and interrelationship when it interfaces with another system.
- Each system has boundaries that determine its sphere of influence and control.



1.5 Types of Systems

The systems can be divided into the following types Physical or Abstract Systems

- Physical systems are tangible entities. We can touch and feel them.
- Physical System may be static or dynamic in nature. For example, desks and chairs are the physical parts of computer center which are static. A programmed computer is a dynamic system in which programs, data, and applications can change according to the user's needs.
- Abstract systems are non-physical entities or conceptual that may be formulas, representation or model of a real system.

Open or Closed Systems

- An open system must interact with its environment. It receives inputs from and delivers outputs to the outside of the system. For example, an information system which must adapt to the changing environmental conditions.
- A closed system does not interact with its environment. It is isolated from environmental influences. A completely closed system is rare in reality.

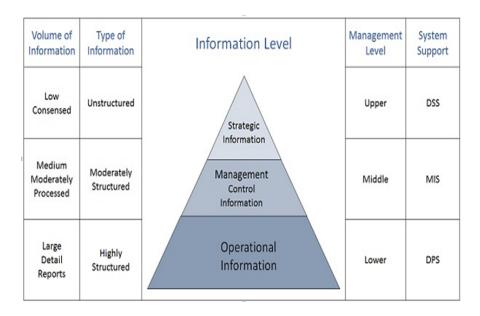


Figure 1.2: Categories of information related to managerial levels and the decision managers make.

Goals

To provide trouble-free, customer-focused, reliable, and affordable web hosting services. WE simply want to continue to operate a profitable web hosting company that makes customers happy. Since the beginning, we have backed our rock solid hosting solutions and top-notch infrastructure with the best customer service and technical support. A common feeling about the technology field is it's all about machines, yes, It does take machines but, Host Pair also knows it takes good people to run a well-oiled machine. Yes, a successful business needs to be committed to client solutions, innovation, creativity, and a warm, caring attitude to all of our customers' business needs. We don't just provide 24x7 support. We really do listen and care.

1.6 Conclusion

we define the process of system analysis and design, outline the benefits of this process and list seven tools and techniques that may aid a organization in implementing its next system analysis and design process. The analyst plays many roles, sometimes balancing several at the same time. The three primary roles of the systems analyst are: consultant, supporting expert, and agent of change. The analyst is the key member of the Management Information System (MIS) and Decision Support System (DSS).

The System Development Life Cycle

2.1 Introduction

The system development life cycle is a conceptual model used for project management that describes the stages involved in an information system development project, from an initial feasibility study through maintainence of the completed application. To understand system development, we need to recognize that a candidate system has a life cycle. The stages are shown below:

- 1. Recognititon of need / initial investigation
- 2. Feasibility Study
- 3. Analysis
- 4. Design
- 5. Implementation
- 6. Post-implementation and maintenance



Figure 2.1: System development life cycle

2.2 Recognition of Need

One must know what the problems are before it can be solved. The basis for a candidate system is recognition of a need for improving an information system or a procedure. For example, a supervisor wants to investigate the system flow in purchasing. When we have completed our visit at netacode, we discuss the recognition needs of their clients and how they collect and process the requirements to complete their project successfully. They told us they have arranged meetings with their clients many times to understand and collect the requirements. They provide them forms and other documents to understand what is the actual need of their clients. If the problem is serious enough, management may want to have an analyst look at it. Such assignment implies a commitment. At this stage only a rough estimation of the development cost of the project may be reached. If the problem is serious enough, management may want to have an analyst look at it. Such assignment implies a commitment. At this stage only a rough estimation of the development cost of the project may be reached.

2.3 Feasibility Study

Depending on the initial investigation the survey expanded to a more detailed feasibility study. It is the test of a system proposal according to its workability. It focuses on three major questions:

- 1. What are the users demonstrable needs and how does a candidate system meet them?
- 2. What resources are available for a given candidate system? Is the problem worth solving?
- 3. What are likely impacts of the candidate system on the organization? How does it fit within the organization MIS plan?

Each of these questions must be answered carefully. They revolved around the investigation and evaluation of the problem, identification and description of the candidate system, specification of performance and the cost of each system and final selection of the best system.

The proposal summarizes what is known and what is going to be done. It is consist of the following:

- 1. **Statement of the problem :** A carefully worded statement of the problem led to analysis.
- 2. **Summary of the findings and recommendations:** A list of the major findings and recommendations of the study. It is the idea for the user who requires quick access to the results of the analysis of the system under study. Conclusions are started followed by a list of the recommendations and a justification for them.
- 3. **Details of the findings:** an outline of the methods are procedures undertaken by the existing system, followed by coverage of the objectives and procedures of the candidate system. Included are also discussions of output reports, file structures, and cost and benefits of the candidate system.
- 4. **Recommendation and conclusions:** Specific recommendations regarding the candidate system, including personnel assignments, costs, project schedules and target dates.

2.4 Analysis

It is the detailed study of the various operations performed by a system and their relationships within and outside of the system. A key question is: what must be done to solve the problem?

When we visited the organization we discussed the analysis system. They first analys if they are able to complete it or not and then they discuss further processes that are steps they should take to make the project successful. Training, experience and common sense are required for collection of the information needed to do the analysis.

Once the analysis is completed, the analyst has a firm understanding what is to be done. The next step is to decide how the problem must be solved. Thus in system design, we move from the logical to physical aspects of the life cycle of a project.

2.5 Design

The most creative and challenging phase of a system life cycle of a project is system design. The term design describes a final system and the process by which it is developed. It refers to the technical specifications that will be applied in implementing the project. The question is here: How should the problem be solved?

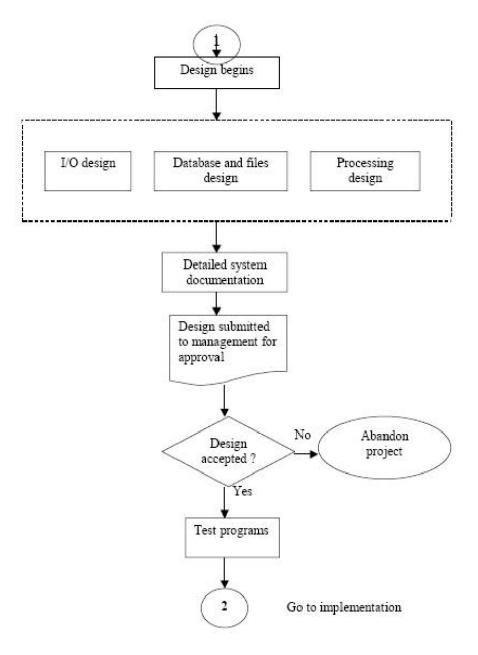


Figure 2.2: design of a system

The first step is to determine how the output is to be produced and in what form. Samples of the output are also presented. Second, input data and master files are designed to meet the requirements of the proposed output. Finally details related to justification of the project and an estimate of the impact of the candidate system on the user and the organization are documented and evaluated by management as a step toward implementation.

In netacode they first create a virtual design of the project by adobe illustrator or figma.then they present it to their clients to justify if it has been according to their requirements or not. In some firms, separate groups of programmers do the programming, whereas other firms employ analyst programmers who do analysis.

2.6 Implementation

The implementation sector is less creative than system design. It is primarily concerned with user training, site preparation and file conversion. Depending on the nature of the system, extensive user training may be required. Conversion usually takes place at about the same time the user is being trained or later.

In netacode they told us they used react js as frontend development and node js for backend development. They also use nuxt js and next js for development. They used php but now they have shifted to javascript.

Once the program becomes available, test data is read into the computer and processed against the file(s) provided for testing. If successful, the program(s) is then run with live data. Otherwise a diagnostic procedure is used to locate and correct errors in the program. In most conversions a parallel run is conducted where the new system runs simultaneously with the old system.

2.7 Post termination and Maintenance

After the installation phase is completed and the user stuff is adjusted to the changes created by the candidate system, evaluation and maintenance begin. Like any system, there is an aging process that requires periodic maintenance of hardware and software. If the new information is inconsistent with the design specifications, the changes have to be made. The importance of maintenance is to continue to bring the new system to standards.

The policy of Netacode is to serve their clients with the project they have created according to the requirements. but they don't share the source code of any project and if their updates are available, they do it take charges. This is their strategy of post implementation and maintenance of any project.

2.8 Conclusion

The Role of the System Analyst

3.1 Introduction

Systems analysts analyse how well software, hardware and the wider IT system fit the business needs of their employer or of a client. They write requirements for new systems and may also help implement them and monitor their effectiveness. Typical responsibilities of the job include: examining current systems.

System Analysis A person who conducts a methodical study and evaluation of an activity such as a business to identify its desired objective in order to determine procedurs by which these objectives can be gained.

3.2 System Analyst

The systems analyst plays a key role in information systems development projects. The systems analyst works closely with all project team members so that the team develops the right system in an effective way. Systems analysts must understand how to apply technology to solve business problems. In addition, systems analysts may serve as change agents who identify the organizational improvements needed, design systems to implement those changes, and train and motivate others to use the systems.

Netacode interpersonal skills relevant to systems work include the following:

Communication:having the ability to articulate and speak the Jan guage of the user, a "flare" for mediation, and a knack for working with virtually all managerial levels in the organization Communication is not just reports, telephone conversations, and interviews, It is people talk ing, listening, feeling, and reacting to one another, their experience and reactions. Some indicators of a climate of closed communication are defensive memos, excessive correspondence, and a failure to speak up for fear of being identified. Therefore, opening communication channels are a must for system development.

Understandingidentifying problems and assessing their ramifications, having a grasp of company goals and objectives, and showing sensitivity to the impact of the system on people at work. Teaching-educating people in use of computer systems, selling the system to the user, and giving support when needed. Selling-selling ideas and promoting innovations in problem solving using computers.

3.2.1 Technical skills include

Creativityhelping users model ideas into concrete plans and develop ing candidate systems to match user requirements.

Problem solvingreducing problems to their elemental levels for analy sis, developing alternative solutions to a given problem, and delineating the pros and cons of candidate systems

Project managementscheduling, performing well under time con straints, coordinating teain efforts, and managing costs and expendi **

Dynamite interfaceblending technical and nontechnical consitlerastions in functional specifications and general design

NetacodeInterpersonal and Technical skill necessary in system Development:

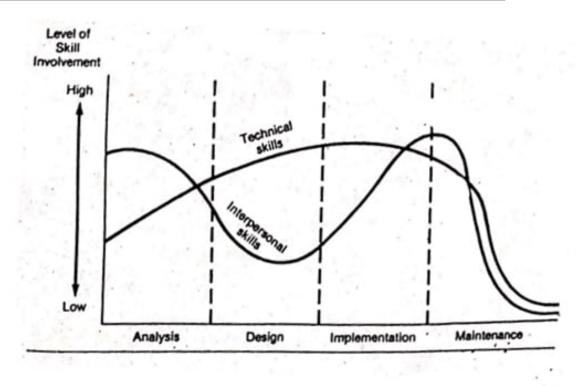


Figure 3.1: Interpersonal and Technical Skills

3.3 The background and experience of analysts include

- 1. Abackground in systems theory and organization behavior.
- 2. Familiarity with the makeup and inner workings of major application areas such as financial accounting, personnel administration, market ing and sales, operations management, model building, and production control.
- 3. Competence in system tools and methotologies and a practical knowledge of one or more programming and data base languages. Experience in hardware and software specifications, which is important for selection.

3.4 The attributes are

Authority-the confidence to "tell" people what to do. Much of this quality shows in project management and team work to meet deadlines. Communication skills-ability to articulate and focus on a problem area for logical solution.

Creativity-trying one's own ideas, developing candidate systems using unique tools or methods. **Hesponsibility-**making decisions on one's own and accepting the conequences of these decisions. **Varied skills-**doing different projects and handling change.

3.5 Conclusion

- A systems analyst is a person who conducts a study, identifies activities and objectives, and
 determines a procedure to achieve the objectives. Systems analysis has a history dating back
 to Taylor. Early analysts worked in factories, specializing in improving work methods and set
 ting time standards for production. With the advent of the computer, the analyst asstimed the
 role of a problem solver and a specialist m developing computer applications.
- 2. Success in systems analysis requires interpersonal and technical skills Interpersonal skills emphasize communication and interface with the user, whereas technical skills include creativity, problem solving, and managing the overall project. During analysis, there is greater need for interpersonal skills, but during design there is greater emphasis on technical skills. During implementation, both skills are needed
- 3. A career in systems analysis requires academic preparation, experience, and good interpersonal relations. The person must be familiar with the inner-workings of business and competent in system tools and meth odologies. The personal qualities include creativity and communications skills and being systematic and sensitive.
- 4. Analysts perform a multitude of roles-as change agent, investigator. architect. psychologist salesperson, and motivator They also need to understand politics.

Systems Planning and the Initial Investigation

4.1 Bases for planning in system analysis:

It is a systematic approach, which uses graphical tools that analyze and refine the objectives of an existing system and develop a new system specification which can be easily understandable by user. It has following attributes: It is graphic which specifies the presentation of application.

4.2 Strategic MIS Planning

Planning for information system development must be done within the framework of the Netacodeoverall MIS plan. The time horizon dimension specifics whether it is short. which is tantamount to the MIS yearly plan medium term, or long range. The focus dimension tells whether the primary concern is strategic, managerial, or operational strategic (MIS) planning is an orderly approach that determines the basic objectives for the user to achieve, the strategies and policies needed to achieve the objectives, and the tactical plans to implement the strategies. The first task in strategic planning is to set the MIS objectives and the results expected. Consideration of these objectives must deal with their fit with the organization's strategic plan, the types of systems and services to be offered, the role of users in system development, and the technology to be used. Managerial and Operational MTS Planning Managerial MIS planning integrates strategic with operational plans. It is a process in which specific functional plans are related to specific number of years to show how strategies are to be carried out to achieve long-range plans. The next step is to devise short-range plans that spell out the day-to-day activities of the system. They are programmed plans requiring a year's commitment. For example, the operating expense budget, the human resource budget of each computer application, and timetables for implementing a new system are all short-range plans designed to implement the organization's master plan by computerizing the labor-intensive areas of the business.

4.3 Strategies for Determining Information Requirements

There are three key strategies or general approaches for eliciting information regarding the user's requirements:

- 1. asking,
- 2. Getting information from the existing information system, and
- 3. Prototyping

Asking This strategy obtains information from users by simply ask. ing them about the requirements. It assumes a stable system where users are well informed and can overcome biases in defining their problem. There are three key asking methods:

- 1. Questions may be open-ended or closed. An open-ended question allows the respondent to formulate a response. It is used when feelings or opinions are important. For example, "How do you evaluate the latest addition to your hardware?" In contrast, a closed question requests one answer from a specific set of responses. It is used when factual responses are known.
- 2. Brainstorming is a technique used for generating new ideas and obtaining general information requirements. This method is appropriate for eliciting nonconventional solutions to problems, A guided approach to brainstorming asks each participant to define ideal solutions and then select the best feasible one.
- 3. Group consensus asks participants for their expectations regarding specific variables a Delphi inquiry. for example, each participant fills out a questionnaire The results are summarized and given to participants along with a follow up questionnaire. Participants are invited to change their responses. The results are again summarized and fed back to the participants. This debate by questionnaire continues until participants responses have converged enough. This method has an advantage over brainstorming in that participants are not subjected to psychological pres sure from others with presumed authority or influence.

4.4 Conclusion

- Planning information systems has become increasingly important be cause information is a
 vital resource and company asset, more and more funds are committed to information systems, and system develop ment is a serious business for computers that incorporate data bases
 and networking
- 2. Planning for information systems has a time horizon and a focus di mensionThe time horizon dimension specifics the time range of the plan, whereas the forus dimension relates whether the primary con cem is strategic, managenal, or operational.
- 3. The initial investigation has the objective of determining the validity of the user's request for a candidate system and whether a feasibility study should be conducted. The objectives of the problem posed by the user must be understood within the framework of the organization's MIS plan
- 4. Determing user requirements is not easy. System requirements change, the articulation of requirements is difficult, and heavy user involvement and motivation are uncertain. Problems with the user analyst interface add further dilliculties to the procedure.
- 5. There are three strategies for eliciting information regarding the user's requirements asking questions, obtaining information from the juvent system, and juntotyping. The asking strategy assumes a stable system when the user is well informed about information requirements. In contrast the prototyping strategy is appropriate for high-un ertainty.

Information Gathering

5.1 Introduction

Information is stimuli that has meaning in some context for its receiver. When information is entered into and stored in a computer, it is generally referred to as data. After processing – such as formatting and printing – output data can again be perceived as information. When information is compiled or used to better understand something or to do something, it becomes knowledge.

5.2 How Netacode collects information from clients.

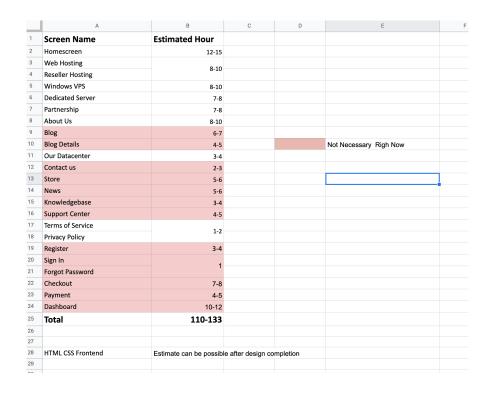


Figure 5.1: Information Collection

Netacode uses various data collection tools to collect necessary information from clients. Then, they make project timeline according to the client's requirements.

5.3 Information about the firm

The following Organization Chart for Netacode is displayed below.

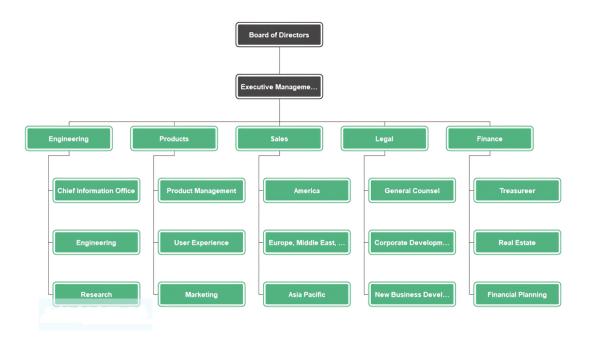


Figure 5.2: Organization Chart of Netacode

5.4 Information Gathering Method – Questionaries

Since information must be acquired accurately, methodically, under the right conditions, and with minimum interruption to user personnel there is some tools which have been used to gather information. Though there are various kinds of information gathering tools we use:

- 1. Review of literature, procedures and forms.
- 2. On-site observation
- 3. Interviews
- 4. Questionnaires

In order to learn more about Netacode, we used a questionnaire form.

1. What are the objectives/goals of your company?

Ans: NetaCode's mission is to cater top notch, innovative, cost-effective solutions in a most professional manner to surpass client expectations and achieve competitive advantage for the clients. NetaCode's vision is to become a leading technology company to help others to use technology so that they can polish up productivity, resolve problems & increase efficiency, thus becoming an active part of their success.

2. Investment of your company?

Ans: \$5000 Yearly.

3. What Software Development model do your company use?

Ans: Agile Development Model.

4. Duration of longest project for your company.

Ans: 6 months

5. Average budget of your projects.

Ans:

6. Which country clients your company gets?

Ans: USA, Turkey, Singapore

7. How do your company measure the progress of a project?

Ans: Netacode has its own Project Managements tool. It uses the tool to manage project and progress of a project.

8. What type of payment system do your company use?

Ans: Bank

9. What technologies do your company use?

Ans: Git, Figma

10. What programming languages do you use during development?

Ans: JavaScript, Php.

11. What framework do your company mostly use during development?

Ans: Laravel is a free and open-source PHP web framework, created by Taylor Otwell and intended for the development of web applications following the model—view—controller architectural pattern and based on Symfony.

12. What type of method/tools do your company use for project scheduling and management?

Ans: Netacode has its own Project Managements tool. It uses the tool to manage project as weel as tack progress of a project.

13. What tools do you use for software testing?

Ans:

14. Do your company ever faced a problem where project deadline is passed? What happens when a project deadline is crossed?

Ans:

15. What are the Hardwares your company use for development?

Ans:

16. Specifications of your mostly used Hardwares for development.

Ans:

Model: iMac 24"(2021)

Display: 4.5K Retina display

CPU: Apple M1 chip 8-core CPU and up to 82 core GPU

Memory: 16GB unified memory

Storage: 512GB SSD

Power: 143W

OS: macOS

17. Do your company have any intern positions?

5.5 Conclusion

This chapter taught us about numerous techniques for acquiring information as well as the Netacode company's organizational structure, which we visited. We also learned about the methods used by Netacode to gather client information.

The Tools of Structured Analaysis

6.1 Structured Analoysis

Structured Analaysis is a development method that allows the analyst to understand the system and its activities in a logical way. It has following attributes

- It is graphic which specifies the presentation of application.
- It divides the processes so that it gives a clear picture of system flow.
- It is logical rather than physical i.e., the elements of system do not depend on vendor or hardware.
- It is an approach that works from high-level overviews to lower-level details.

6.2 Structured Analysis Tools

During Structured Analysis, various tools and techniques are used for system development. They are

- Data Flow Diagrams
- Data Dictionary
- Decision Trees
- Decision Tables
- Structured English
- Pseudocode

6.3 Information Gathering Tools

It is a technique developed by Larry Constantine to express the requirements of system in a graphical form.

- It shows the flow of data between various functions of system and specifies how the current system is implemented.
- It is an initial stage of design phase that functionally divides the requirement specifications down to the lowest level of detail.

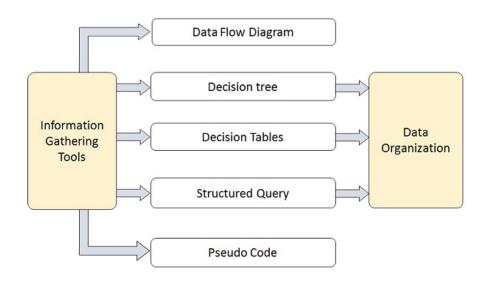
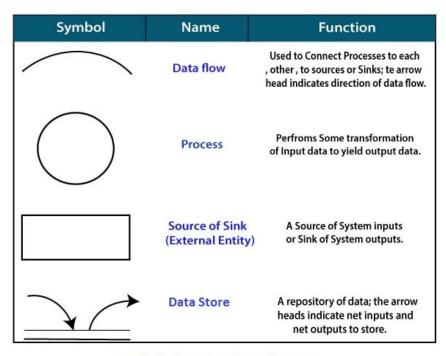


Figure 6.1: Information Gathering Tools

- Its graphical nature makes it a good communication tool between user and analyst or analyst and system designer.
- It gives an overview of what data a system processes, what transformations are performed, what data are stored, what results are produced and where they flow.

Standard symbols for DFDs are derived from the electric circuit diagram analysis and are shown in fig6.2:



Symbols for Data Flow Diagrams

Figure 6.2: Data Flow Diagram Symbols

Here is a Data Flow Diagram that Netacode provided, illustrates the data flow between their website, web server and database.

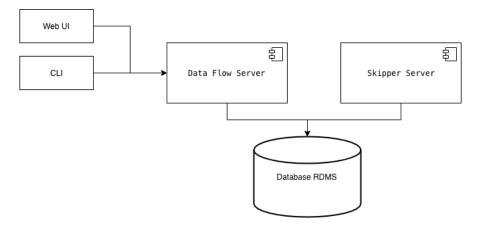


Figure 6.3: Data Flow Diagram of Netacode

Feasibility Study

7.1 Introduction

A feasibility study in software engineering is a rigorous evaluation of the profitability and viability of a software development initiative. For a company with 10-year expertise, ScienceSoft helps businesses understand whether a new software project is worth their time and money. Feasibility Study Process:

- 1. Information assessment
- 2. Information collection
- 3. Report writing
- 4. General information

The next step is to determine exactly candidade system needed.

7.2 Need of Feasibility Study in The Company:

Feasibility study is so important stage of Software Project Management Process as after completion of feasibility study it gives a conclusion of whether to go ahead with proposed project as it is practically feasible or to stop proposed project here as it is not right/feasible to develop or to think/analyze about proposed project again.

Along with this Feasibility study helps in identifying risk factors involved in developing and deploying system and planning for risk analysis also narrows the business alternatives and enhance success rate analyzing different parameters associated with proposed project development.

7.3 System Performance

Performance is an indicator of how well a software system or component meets its requirements for timeliness. Timeliness is measured in terms of response time or throughput. The response time is the time required to respond to a request. It may be the time required for a single transaction, or the end-to-end time for a user task. For example, we may require that an online system provide a result within one-half second after the user presses the "enter" key. For embedded systems, it is the time required to respond to events, or the number of events processed in a time interval. The throughput of a system is the number of requests that can be processed in some specified time interval. For example, a telephony switch may be required to process 100,000 calls per hour.

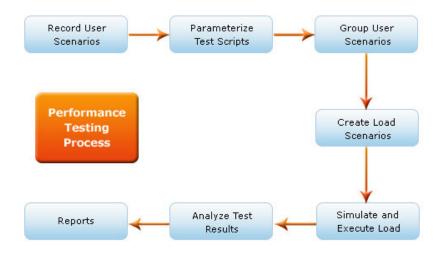


Figure 7.1: System performance diadram

7.4 Statement of Constraints

Constraints are a factor that limit the solution of the problem.

The three basic constraints, which are the synchronizing support effect disappearance constraint, the minimum oscillation frequency constraint of low frequency oscillations and the frequency stability constraint, consist of a triangle criterion to determine the reasonable size of the synchronous grids. It is the fact that there are only so many hours in a day to accomplish things. One that restricts, limits, or regulates.

7.5 Identification of Specific System Objective

In netacode a build a project and not sell the project ,they rent every project for a certain time(1 year). They must follow the below technique to build a project successfully.

- 1. Live Chat and Ticket Review system
- 2. Asking them over the phone.
- 3. Listening to them carefully.
- 4. Web Reviews
- 5. Comment Sections
- 6. Keyword Research

7.6 Feasibility Consideration

7.6.1 Economic Feasibility

NetaCode give customer a 30-day money back guarantee, incase clients are not happy with our service.their hosting packages are scalable- clients can upgrade/downgrade as per clint needs. No hidden prices.

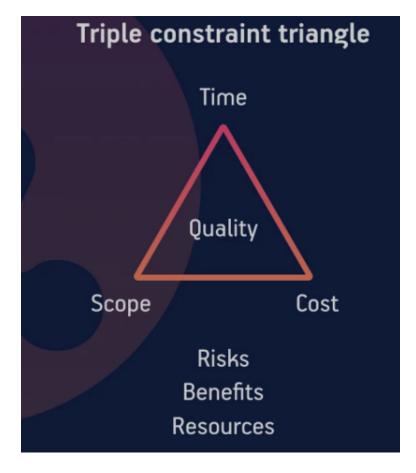


Figure 7.2: constraints level diagram

7.6.2 Technical Feasibility

Since they rent the software, they handle all the technical issues themselves, they keep the software on their own multiple servers.

7.6.3 Behaviour Feasibility

Computer and device are not know about what they do.what we want we can do everything with clint. So every project must know the behaviour with clint.

For successfully run a project NetaCode flow 5 steps with in 8 step for Feasibility Analysis.

- form a project team and appoint a project leader
- prepare system flowchart.
- select a template which already build by them
- prepare and report final project directive to management
- select best candidate system

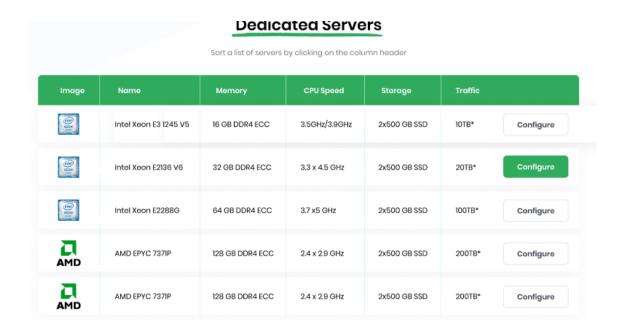


Figure 7.3: selecting best candidate system

7.7 Conclusion

A feasibility study is conducted to select the best system that meets performence requirement. Three consideration are :economic,technical and behavioral .Economic analysis as cost/benefit .techincal evaluate existing cost/benifit,and they follow the feasibility steps to build a project successfully.

Cost/Benefit Analysis

8.1 Intoduction

A cost-benefit analysis is the process of comparing the projected or estimated costs and benefits (or opportunities) associated with a project decision to determine whether it makes sense from a business perspective.

8.2 Data analysis

Data analysis is a prerequisite to cost/benefit analysis. A single statement that succinctly defines clint product/service

- Fast , Secure and Reliable

8.3 **cost**

Cost determine the benifit and seving that are expected from the system and compare them with the expected costs.

The cost for a project mainly depend on time, server, hardware, equipment and personnel cost.

Hardware/software cost:

It include the cost of purchasing or leasing of computers and its peripherals. Software cost involves required software cost.

CloudLinux LIVE Limit	Eco	Standard	Advanced
RAM	700 MB	1 GB	2 GB
Disk I/O	20 Mbps I/O	20 Mbps I/O	50 Mbps I/O
Concurrent Connections	20 EP	20 EP	50 EP
Max. Number of Processes	100 nPROC	100 nPROC	100 nPROC
CPU Cores	1 CPU Core	1 CPU Core	2 CPU Core

Figure 8.1: using hardware list

Our Provide Best Quality Services

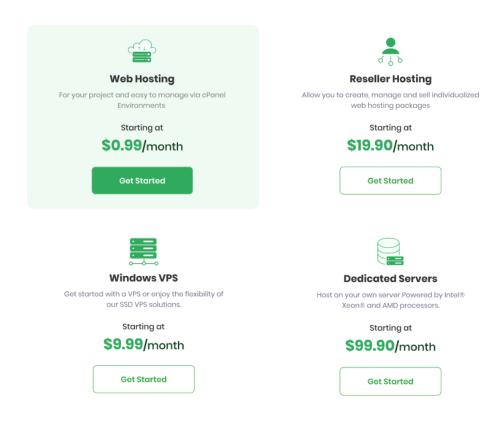


Figure 8.2: NetaCode services

personnel cost:

It is the money send on the people involve in the development the project .These expenditures include salaries, other benifit such as health ,conveyance allowance etc.In netacode each personnel cost is 50000 per month and forevery project extra working per hours they pay extra 5000.

Time cost: If a project need to made by personnel more time ,give them more money.

	A	В	С	D	E	F
1	Screen Name	Estimated Hour				
2	Homescreen	12-15				
3	Web Hosting	8-10				
4	Reseller Hosting	8-10				
5	Windows VPS	8-10				
6	Dedicated Server	7-8				
7	Partnership	7-8				
8	About Us	8-10				
9	Blog	6-7				
10	Blog Details	4-5			Not Necessary Righ Now	
11	Our Datacenter	3-4				
12	Contact us	2-3				
13	Store	5-6				
14	News	5-6				
15	Knowledgebase	3-4				
16	Support Center	4-5				
17	Terms of Service	1-2				
18	Privacy Policy	1-2				
19	Register	3-4				
20	Sign In	1				
21	Forgot Password					
22	Checkout	7-8				
23	Payment	4-5				
24	Dashboard	10-12				
25	Total	110-133				
26						
27						
28	HTML CSS Frontend	Estimate can be possible	after design complet	ion		
29						

Figure 8.3: Time requirement for a website ECNHOST made by NetaCode

8.3.1 Cost analysis for a existing project

Successfully run a project by Netacode cost analysis Total Investment by clint is 3,550,000tk

Ten member work in this project for 15 days.

personnel cost =(10*50,000)+(5000*3*10)=6,50,000tk

hardware/software cost=5,00000tk

equipment cost=20,00000tk

Others=4,00000

total=650000+500000+2000000+400000 =3550000tk

8.4 Benefit

The biggest advantage of Netacode audience is that -

- clint can start with their services without any technical knowledge, as we will provide full support for them.
- Very Economical (We can beat any of our competitors) with ensuring quality service

- Multi-Carrier Route Optimized Network
- Proactive monitoring and resolution
- Exceptional performance and reliability
- Best customer retention rate
- 24 hours Live Support by responsible and reliable Staff.

8.4.1 Benefit analysis for a existing project

After running the project average every month in first One year earn by clint 150,000. so,No.of month need for net benifit

n=3,550,000/200,000= 18 month= 1.8 year and every month server cost pay by clint is 10,000tk

month	Need cost=C- benifit	C=Server cost(10,000)+need	benefit	Cummulative benefit
	Dennit	cost		bellefit
0	3550000	3560000	200000	200000
1	3360000	3370000	200000	400000
2	3170000	3180000	200000	600000
3	2980000	2990000	200000	800000
4	2790000	2800000	200000	10,00000
5	2600000	2610000	200000	12,00000
6	2410000	2420000	200000	14,00000
7	2220000	2230000	200000	16,00000
8	2030000	2040000	200000	18,00000
9	1830000	1840000	200000	20,00000
10	1640000	1650000	200000	22,00000
11	1250000	1260000	200000	24,00000
12	1060000	1070000	200000	26,00000
13	870000	880000	200000	28,00000
14	680000	690000	200000	30,00000
15	490000	500000	200000	32,00000
16	300000	310000	200000	34,00000
17	110000	120000	200000	36,00000
18	-80000	-70000	200000	38,00000

So after 18 month running this project the clint get 20,0000tk profit every month

8.5 Conclusion

Cost benefit and data analysis is most Important think for every system.we can find the existing system is benifited or not after analysis cost and benefit analysis.Clint can decide the want run the system after seeing the cost analysis.

The Process and Stages of System Design

9.1 Introduction

The discussion is so far to a pivotal point in the system development life cycle. User requirements have been identified. Information has been gathered to verify the problem and evaluate the existing system. A feasibility analysis has been conducted to review alternative solutions and provide cost/benefit justification. The culmination of the study is a proposal summarizing the finding and recommending a candidate system for the user.

If the figures and the reasoning behind the candidate system makes sense,management authorizes the proposed change. At this point in the system's life cycle, the design phase begins. The design phase is a solution, a "how to" approach,compared to analysis,a "what is orientation. It translates the system requirements into ways of operationalizing them.

The design phase is a translation from a user-oriented document to a document oriented to the programs or database personnel.

9.2 Logical and Physical Design

System design goes through two phases of development: logical and physical design. The design which shows the logical flow of a system and defines the boundaries of the system is known as **logical system design**. It describes the input,output,databases and procedures all in a format that meets the user requirements. The design covers the following:

- 1. Reviews the current physical system: its data flow, frequencies.
- 2. Prepares output specification: it determines the format content and frequency of reports.
- 3. Prepares input specification: format, content and most of the input functions
- 4. Specifies the implementation plan.
- 5. Review benefits, costs, target dates and system constraints.

Physical design relates to the actual input and output processes of the system. It focuses on how data is entered into a system, verified, processed and displayed as output. It produces the working system by defining the design specification that specifies exactly what the candidate system does. It consist of following steps:

- Specifying the input/output media, designing the database, and specifying backup procedures.
- Planning system implementation.
- Devising a test and implementation plan, and specifying any new hardware and software.
- Updating costs, benefits, conversion dates, and system constraints.

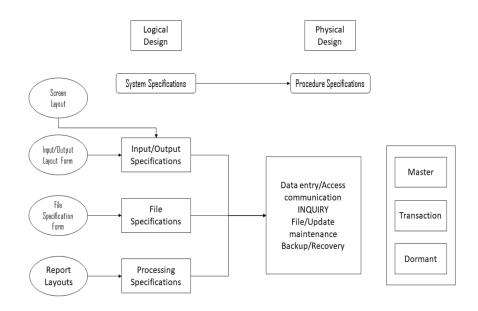


Figure 9.1: system goes through Logical and Physical design

9.3 Structured Design

Structured design is a data-flow-based methodology. The approach begins with a system specification that identifies input and output and describes the functional aspects of the system. In structured designing, the system specifications act as a basis for graphically representing the flow of data and sequence of processes involved in a software development with the help of DFDs. After developing the DFDs for the software system, the next step is to develop the structure chart.

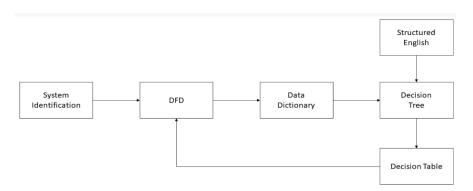


Figure 9.2: Structured Design Method

9.4 HIPO Diagram

HIPO is a forms-driven technique in that standard forms are used to document the information. It consists of a hierarchy chart and an associated set of input/process/output charts. It captures the essence of top-down decomposition, it describes the data input and output from processes and defines the data flow composition. It was developed by IBM as a design aid and implementation technique. The overall design of the system is documented using HIPO charts or structure charts. The structure chart is similar in appearance to an organizational chart, but has been modified to show additional detail.

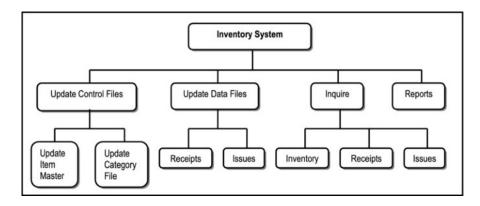


Figure 9.3: HIPO Diagram for a project by NetaCode

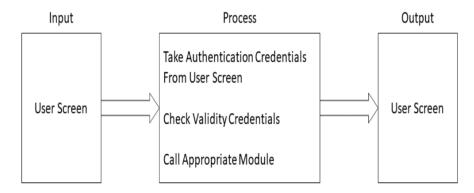


Figure 9.4: IPO Diagram of NetaCode Implemented project

9.5 IPO Diagram

An IPO (Input Process Output) Diagram is a very high level diagram used for system analysis that visually describes the business process with the description of each component in word. It shows a process key inputs and resulting output after a set of operations.

9.6 Conclusion

System design is the phase that bridges the gap between problem domain and the existing system in a manageable way. This focuses on the solution domain, like how to implement. It is the phase where the SRS document is converted into a format that can be implemented and decides how the system will operate. In this phase the complex activity of system development is divided into several-sub-activities. Which coordinate with each other to achieve the main objective of system development.

Input/Output and Forms Design

10.1 Input Design

In an information system, input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc.

input forms and screens have following properties

- It should serve specific purpose effectively such as storing, recording, and retrieving the information.
- It ensures proper completion with accuracy.
- It should be easy to fill and straightforward.
- It should focus on user's attention, consistency, and simplicity.

10.2 Objectives for Input Design

The objectives of input design are

- To design data entry and input procedures
- To reduce input volume
- To design source documents for data capture or devise other data capture methods
- To design input data records, data entry screens, user interface screens, etc.
- To use validation checks and develop effective input controls.

10.3 Data Input Methods

Some of the popular data input methods are

- Batch input method (Offline data input method)
- Online data input method
- Computer readable forms
- Interactive data input

10.4 Output Design

The design of output is the most important task of any system. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

10.4.1 Objectives of Output Design

The objectives of input design are

- To develop output design that serves the intended purpose and eliminates the production of unwanted output.
- To develop the output design that meets the end users requirements.
- To deliver the appropriate quantity of output.
- To form the output in appropriate format and direct it to the right person.
- To make the output available on time for making good decisions.

10.5 Forms Design

Both forms and reports are the product of input and output design and are business document consisting of specified data. The main difference is that forms provide fields for data input but reports are purely used for reading. For example, order forms, employment and credit application, etc.

10.6 Types of Forms

Flat Forms

- It is a single copy form prepared manually or by a machine and printed on a paper. For additional copies of the original, carbon papers are inserted between copies.
- It is a simplest and inexpensive form to design, print, and reproduce, which uses less volume.

Unit Set/Snap out Forms

- These are papers with one-time carbons interleaved into unit sets for either handwritten or machine use.
- Carbons may be either blue or black, standard grade medium intensity. Generally, blue carbons are best for handwritten forms while black carbons are best for machine use.

Continuous strip/Fanfold Forms

- These are multiple unit forms joined in a continuous strip with perforations between each pair of forms.
- It is a less expensive method for large volume use. No Carbon Required (NCR) Paper
- They use carbonless papers which have two chemical coatings (capsules), one on the face and the other on the back of a sheet of paper.
- When pressure is applied, the two capsules interact and create an image.

10.7 Employment Form

Below here is a joning leter provided by NetaCode

Joining Letter
Date:
To,(HR/Concerned Manager)(Name of the Company)(Address)
Subject: An Intimation of Joining on Duty
Respected Sir/Ma'am,
I am elated to inform you that I will be joining as in your organisation on date I accept the terms and conditions mentioned in the appointment letter no and dated I assure you that I will utilise my professional experience and skills to the benefit of the organisation.
Thank you,
Yours Sincerely,
Signature
Contact Number

Figure 10.1: Joning letter of Netacode

10.8 Conclusion

With their consent, the information on the form above was gathered during the visit to Netacode Inc. and used in the report. The form is used by the organization to gather project requirements from clients. This form includes Client Contact Details, Project Time frame, Project Outline, Information on existing system, Website Architecture, Design Taste, Competition and Niche, Comment Section and a Sample Project output.