

Clean brite company

[Business](#), [Company](#)



Coursework Header Sheet

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CASE STUDY IN MULTIVIEW FRAMEWORK

ABSTRACT

Clean Brite Company (CBC) Ltd. is the supplier of cleaning products in UK. It was set up in 1982. In 2005, CBC bought out its main competitor Scrubaway Allbright Ltd. (SAL), and began to integrate business and merge operations.

In 2006, the managing director of CBC was attacked by executive board due to a large amount of money used to I. T. project during the last three years, but that project was unsuccessful. This event led to a management consultant being invited to identify appropriate techniques for business and requirements analysis activities within the organization. The management consultant suggested using the Soft Systems method to firstly understand the problem domain. This report uses Avison and Wood Harper's Multiview framework to case study and aid the system developer easy to understand the requirements of system and user.

ANALYSIS OF MULTIVIEW

Multiview framework consists of five stages, including human activity, information, socio-technical, human-computer interaction, and technical. Each stage is essential and inevitable. The following we describe the kind of

activities to be carried out by the developer and what issues to be considered.

The purpose of stage 1 is analysis of human activity. Firstly, analysis conflicts between stakeholders, developer should draw a rich picture to show the situation of stakeholder. Then, names relevant systems, including write a root definition and use CATWOE to mnemonic. Finally, build up conceptual model to show what the system will do.

Some issues might consider in this stage. Firstly, system developer must identify what people will use the system. Secondly, identify the mission and objective of CBC. Then, identify the difference culture between each of department. The system must developer must consider the requirement and benefit conflicts of each stakeholder.

The purpose of stage 2 is analysis of information. According to stage 1's root definition, development functional model to identify the main function. Then, verify the model and draw data flow diagram for next stage. In other side, development entity model for stage 4 & 5 and identify relationship between entities.

In this stage, the first issues must consider is business process. System developer should understand the processes of each department, such as accountancy, inventory, HR. Then, consider implement issues, linked all of entity to form a business process, such as customer, supplier, products, staff, order, purchase and deliver.

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ANALYSIS OF MULTIVIEW

The activities of stage 3 are analysis and design of the socio-technical aspects. Firstly, specify social and technical objective, then specify their alternatives. The second activities are match socio-technical alternatives and select the best solution. The final activities is define computer task, role-set and people tasks for solution.

In stage 3, the first consider issues are human themes, such as job satisfaction, the difference need of each user. Secondly, consider social ethics and legal issues. Then, consider collaborate issues, the use of technology must collaborate and fit in user requirement and organization structure. Finally, consider resources and budget issues.

The purpose of stage 4 is design of the human-computer interface. The first activity is making specify decision on the technical system alternatives according to entity model and role-set which set up in stage 3. Next activities is define human-computer interface, such as output/input. Then, define the technical requirement for next stage.

In this stage, the first consider issues are logical theme, including understands the usual habit of user use computer. The interface design must user-friendly and accepted by user. Next consider issues are physical theme, including set up standard and guidelines. Finally, security issues also considered, including high security interface.

The purpose of stage 5 is technical design. The first activity is implement technical according to stage 2's entity model and stage 4's technical requirement, including the subsystem of application, information retrieval, database maintenance, control, recovery and monitoring. Next activity is output design, such as prototype.

In this stage, some issues must be considered. Firstly, system developer must consider security issues, including choose technical tool for security, such as anti-virus software and firewall hardware. Then, consider networking issues, such as internet, intranet and extranet. The issues of programming must also be considered, including easy maintaining and debugging.

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SYSTEM

REQUIREMENTS

SPECIFICATION

In order to satisfy the requirement of end-user, there are several system requirements (including functional and non-functional) that we must be fulfilled. (Please refer to Appendix 2: Use Case diagram for Home Sector Order Processing System)

The first functional requirement is place order. Customers use their id and password login to system, then able to take order via the web. Therefore, the Home Sector Order Processing System of CBC must provide product catalogue for customer to reference. Customer will able to select products,

quantities and delivery method, and then click the button to confirm order. After taken order, the system will give an order number to customer.

The second functional requirement is query order. Customer will able to query the current order status via their order number after login success, such as track the shipping time, and also able to modify order if customer has not been pay bill or the products have not been sent. If the products are out of stock, customers will able to cancel order after shipping deadline. It is noteworthy that some customers of CBC do not have web access or do not know how to use computer, so the telephone sales of CBC must able to replace

customers to do this process, including place order and query, and then via telephone to service this customers. The sales also able to maintain product catalogue, ensure provide the update information to customers. The third functional requirement is purchase that allows the purchase department staffs pre-define the manufacturer's supplier and products material data. If CBC needs to order cleaning products, system will auto take order to suitable manufacture and then update the inventory data in place order function.

The next functional requirement is about shipping. CBC staff must able to pre-define and input the shipping agent data, such as DHL, Parcel force. When customer confirms order, the system will notify the shipping agent and ready for dispatch at the first time. Customer will able to check the shipping status via the function of query order.

The next functional requirement is system maintain. System admin will able to maintain system via the online web, including modify user interface, create new user, and set up user catalogue. System admin must also able to

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view the statistics information of the system usage status, including system flow statistics, user login statistics, and so on. The sixth functional requirement is report that allow supervises, manager and director view or print out report, such as system report, finical report, management report, and so on, as support for achieving their business objectives.

The final function requirement is interface, including user, software, hardware and communication. The system interface must user-friendly and allow users choose their own interface, such as interface templates.

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SYSTEM

REQUIREMENTS

SPECIFICATION

In addition to this functional requirement, there are several non-functional system requirements that we must be fulfilled. (Please refer to Appendix 1: Rich picture of Clean Brite) Firstly, security requirement is necessary, including privacy, piracy, trade secrets, copyright virus and so on. CBC must protect user's data and provide high security interface for user. Therefore, we need to set up a standard to achieve this requirement, such as security policy, system management handbook, and user several software and hardware to prevent, detect and correct system, such as firewall, anti virus software. We also regular evaluate risk, monitoring abnormal status and backup data.

Secondly, quality requirement is a key point. The objective of this system is providing a quick, efficient service to customers. Therefore, system need to good quality control, such as adaptability, availability, flexibility, reliability, and so on. Use suitable software and hardware to achieve this requirement.

The next non-functional requirement is performance. CBC is impossible unlimited spent money for this system, because it will impact the company performance. Therefore, planning budget, system cost and product price are necessary.

Then, documentation requirement is also necessary, such as proposal, handbook, report, and so on. It may be need to print out hardcopy provide to customer (such as products catalogue) or staff who do not have web access.

The final non-functional requirement is ethical. CBC as a responsible corporate, we must consider the social, legal and environment impact of new system, such as staff unemployment or job opportunity issues, the issues of sustainable development, and the issues of legal and ethics. Figure 1? The system requirements specification of Clean Brite case study

Place Order

Query Order

Security

Quality

Purchase

Support

Functional

Shipping

Non-Functional

Performance

Interface

Documentation

System

Maintain

Report

Ethical

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SYSTEM

REQUIREMENTS

SPECIFICATION

The following is the primary scenario of the Home Sector Order Processing System of CBC, including the function of take order, query order and non-functional of communication and training:

In taker order function, customer must input id and password login to system, then they able to view products information and take order. New customer must register via web and then gain a user id. It is noteworthy that new customer must take order and complete order in two month after register, if not, our system will auto delete their user id. When system

receives new customers register information, our sale will contact them to understand their need. We estimate system will have about 700 customers and our system database able to storage about 1, 000 customer records. In query function, customer will able to view their order status after login success. Customer will able to modify order such as change shipping method if customer has not been pay bill or the products have not been sent. In general standard, our system not allows customers cancel order, but if the products are out of stock after shipping deadline, customer will able to cancel order. In communication scenario, we must maintain good communication between company and staff, customer and sales. CBC must regular meeting with all staff and listening their requirement or suggestion. In other side, we do not completely dependence the information system communicates with customers. CBC sales and staff also regular contact to customer and understand their requirement.

In education and training scenario, CBC will provide training course to staff in order to strengthen their capability to maintain and operate the system. We also write the system use handbook to customer, increase their knowledge to use the system. Figure 2? The primary scenario frame of Home Sector Order Processing System

System

Function

Communication

Education

&

Training

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DISCUSSION OF REQUIREMENTS ANALYSIS TOOLS

CBC is a classic case of information system development, many company and enterprise are facing the same problems, including human and benefit conflict between stakeholder, high percentage of I. T. project failure, the cost of I. T. project is over budget, the system not satisfy user, and so on.

Multiview framework provides primary guideline to system developer in information development. Appropriate to use this framework, will able to reduce the risk of project failure, and increase the efficiency and effectiveness of the new system. The following is my personal reflection, including discuss the importance of Multiview framework, how it assists the system developer, and my experience sharing.

The first important of Multiview framework is about freedom of thinking environment. Both vision 1 and vision 2 of Multiview framework are not highly prescriptive and not hard standard. This framework only provides the base themes of issues, such as “ human activity analysis”, “ information analysis”, “ socio-technical analysis and design”, not provide real suggestion

and advice. Therefore, Multiview framework will be able to make freedom of thinking environment to system developer. In this framework, system developer can choose techniques and tools according to organization situation and needs, and then define, implement, install and operate new system, not limited by hard standard and prescriptive methods.

The second important of Multiview framework is about techniques and tools. Although Multiview framework only collect external techniques and tools, not original, but it fused many of techniques and tools, such as rich pictures, entity model, data flow diagram, and so on. It provides space for system developer to consider what techniques and tools will use. In this framework, system developer can contingent to choose appropriate techniques and tools in system development, not limited to use particular techniques and tools. This flexible option is very important, because difference organization have difference situation, and they need to use difference techniques and tools.

In addition, Multiview framework provide good guideline for system developer to develop new system, this is the most important point of this framework. In this century, soft system thinking is the rise of system development, more and more system developers begin aware user requirement is the most important consider issues, not technical requirement. Therefore, Multiview framework provides a guideline which combine soft and hard system thinking. Both vision 1 and vision 2 are provide guideline to guide the system developer how to combine and coordinate the requirement of human, social, and technical.

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DISCUSSION OF REQUIREMENTS ANALYSIS TOOLS

In case of CBC, the main reason of I. T. project failure is the system not satisfy user requirement. It shows that the primary problems appear in organization and human aspect, not technical aspect. It also shows the CBC must do a new project to change current situation. The following is discussing the five phase of Multiview framework how to assist the system developer in information system development.

The first phase of Multiview framework is about human activity and organization analysis. This phase able to help system developer understand the problem domain and assist the system developer define the base user requirement. For example of CBC, this phase of Multiview framework allow the system developer use holistic technique to analysis, such as rich picture, root definition, conceptual model. This activity can help the system developer to understand the organization culture, the conflict between stakeholder (such as CBC and SAL. or I. S. department and other department), and the general activity of stakeholder. The second phase of Multiview framework is about information modeling. The system developer will use data technique (such as data flow diagram) and process techniques (such as entity relationship diagram) to analysis the information issues. It can help the system developer understand what information processing function is the system to perform. For example of CBC, this phase can help

the system developer understand and define the base need of system front-end and back-end, such as the use interface defines, and the order-processing in database. The next phase of Multiview framework is about socio-technical analysis and design. This phase guide the system developer defines the computer task, role-set and people tasks for solution step by step. For example of CBC, this phase can help the system developer set social and technical objective, and then match them, such as match people thinking and technical requirement. It also aid the system developer understand how work will do.

The next phase of Multiview framework is about human-computer interface. This phase able to aid the system developer define system interface. For example of CBC, system developer can understand what operate will use in the system, and how interface will user-friendly for user. The final phase is about technical design and construction. This phase will able to help the system developer define the technical aspect, such as database structure defines and prototyping output. It also aid the system developer detail design the computer system and construction.

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DISCUSSION OF REQUIREMENTS ANALYSIS TOOLS

In my opinion, both Multiview vision1 and vision 2 frameworks are 3D thinking, because this framework able to guide the system developer

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considers difference type of issues from difference point of view. This framework is includes soft thinking and hard thinking, and able to provide guidance for system developer in match and coordination hard and soft thinking. It can help the system developer thinking on the right direction in system development, including define, develop, install and operate. The following is my experience sharing and my comments of Multiview methodology.

Multiview methodology in addition practical use, it also use to academic study and research. This methodology covers many of themes, including organization, human, information, social, technical, and so on. Student learning this methodology will able to study many knowledge of different area, such as organization analysis, system define, technical planning. They also able to understand the soft system thinking is critical factor in system development. In other side, Multiview methodology has development of space, for example add new phase (such as the phase of testing, maintenance), and then make a new vision that further improve this methodology, so it has academic research price.

Although Multiview methodology has many of advantage, it is not express using this methodology able to ensure success. In fact, no methodology is able to ensure success in this world. It is because different methodology users have different understanding of methodology, difference organization have difference situation, and difference stakeholder have difference impact to

methodology. This three factor will led to difference result (fail or success) in the same methodology. For example, CBC use Multiview methodology to

build up new information system successfully, but other companies use the same method not sure success, even CBC use the same method next time also not sure success.

In addition, Multiview methodology although have many good point, it is not express this methodology is the best. I think no methodology is the best. In my opinion, apart from academic study and research, methodology user should not direct compare between methodology and methodology in practical use. Therefore, methodology users should according to current situation, organization culture, and stakeholder background to choose appropriate methodology. Finally, Multiview methodology although provide good analysis structure and stages to aid the system developer, it is not sure enough. The methodology user should according to current situation, flexible to add phase or techniques and tools if it is necessary.

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CONCLUSION

This case study shows that Multiview methodology framework is base on soft system thinking, but fuse hard system thinking. Therefore, it will able to aid system developer analysis the user requirement and define the system requirement according to current situation. In addition, this methodology has study and academic research price.

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Appendix

1:

Rich picture of Clean Brite

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Appendix 2: Use Case diagram for Home Sector Order Processing System

Select

Quantities

Select

Products

Sales / Clerk

Place

Order

Staff

Product

Maintain

Purchase

staff

Managing

Director

Select

delivery

Products

Supplier

Information

Customer

Query

Order

Shipping

Agent

Purchase

Maintain

Modify

Order

Management

Report

Executive

Board

Finical