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Management Control: A Process that Creates Organizational Meaning

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Abstract
Purpose - The present article uses Checkland and Holwell's (Checkland and Holwell, 1998) POM Model to describe how the workings of management control can be understood in a company.
Design/methodology/approach - The model departs from employee's wish to act in a meaningful way. From a data-rich surrounding, they select information to which they then attribute meaning in collaboration with other employees in the organization. This process of organizational unification around an interpretation forms the basis for decisions and actions that can be regarded as a process that creates organizational meaning. Interviews with three different organizations supply the data for three examples regarding how to describe this organizational sensemaking.
Findings - The examples show that individuals in an organization can contribute to resulting meaningful actions. Their shared goals and values form the basis of interpretations of information and impressions collected by the organization's employees can be described as a management control process.
Originality/value - The meaning of the concept *management control* has varied over time. The original definition, in some respects normative, has been challenged in recent years in favour of a more behaviourist-oriented definition.
Keywords: Management Control, Sensemaking, Middle Management
Paper type: Research Paper

Introduction

A point of departure frequently used in various attempts to define management control is that it concerns individuals within organizations. Anthony (1988) claims that costs cannot be controlled directly; instead, emphasis should be placed on controlling the employees. This approach is also reflected as definitions concerning informal social control (Chenhall, 2003), relations within organizations (Euske and Riccaboni, 1999, van der Meer-Kooistra and Vosselman, 2000) and how employees are organized (Whitley, 1999). A shared foundation can be described in terms of modifying behaviour (Flamholtz, Das and Tsui, 1985, Langfield-Smith, 1997) elucidated in the following quotation (Chow, Shields and Wu, 1999, p. 441).

"Management control systems (MCSs) help organizations to increase the probability that employees make decisions and take actions which are in the organizations best interest."

Against this background, it is interesting to discuss the type of context the employees are situated in and how, in this situation, they contextualize the prerequisites for the operations, how they create a meaningful frame of reference. This paper will address how employees can be part of organizational sensemaking and create the prerequisites for efficient planning and control leading to an efficient management control. The assumption that the individual behaviour of an employee contributes to the joint planning and control will also be investigated.

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Individual and Organizational Sensemaking

Knowledge concerning the surrounding world and its characteristic traits is a variable depending on the individual, but every human being has a unique perception of the reality of the surrounding world (Berger and Luckmann, 1966). To take it one step further, knowledge may be regarded as part of a social situation, a context, where the extant knowledge in the group defines the group's perception of its own reality (Weick, 1993). According to Berger and Luckmann the social knowledge that constructs reality for a group becomes an interesting field of study. This knowledge may be described in terms of an individual's thoughts, an awareness of certain values, ideologies, conceptions of a certain social status or other thoughts that can result in certain actions (Weick, 1993). In an everyday situation, the surrounding world is interpreted in accordance with a subjective attribution of meaning where thoughts and actions in various ways become expressions of what is conceived as real and meaningful (Daft and Weick, 1984). In inter-subjective meetings, the subjective can contribute to the construction of a common-sense conception of everyday life (Berger and Luckmann, 1966). These meetings can be described in terms of a large network conceived as real by an individual partly in terms of large networks, such as countries, and partly as smaller networks, such as organizations. To be able to participate in the networks, an awareness of time and space is required, that is, here and now creates an awareness of and an attention to what must be conceived of as real. An individual's place and understanding of reality are also made possible through the language that coordinates the inter-subjective meetings filling the surrounding world with meaningful "objects" (Berger and Luckmann, 1966). The meetings and objects can be seen as temporary patterns or as structures that create the reality by which I as an individual orientate myself. Through actions such as looking at my watch and by going over in my mind what day it is, I orientate myself in the time structure that is one way that I can perceive my reality. In the structure, the objects become part of an objectification, which means that other individuals I interact with are able to perceive of, and interpret an object in a similar fashion, which can be seen as the production of signals. Language is an example of one of the most important signifying systems but may also be seen as the prerequisite of inter-subjective communication. When a concept is communicated it leaves the area of subjective classification and assumes a form of objective point of view that myself and others can relate to (Weick, 1995). Language makes it possible for the concept to be disconnected from an individual, thus, rendering the concept an objective part of reality. Through language various individuals can also become part of everyday life and can contribute to and retrieve knowledge from the social stock of knowledge disseminated through the social networks.

An explanation frequently used to understand the creation of meaning suggests that it relates to interpretations and translations (Daft and Weick, 1984). On the other hand, Weick (1995) objects to this view on sensemaking and claims that there are clear-cut distinctions between the concepts, especially if attempts are made to understand the sensemaking at a deeper level. Sensemaking is an activity that may, to a degree, be compared with interpretation, but then again, not really. Sensemaking may be regarded as a process claims Weick, an activity where the stress must be placed on the activity, whereas the interpretations may well be perceived as a process. However, continues Weick, this process focuses instead on the product, that is, the interpretation. One way to combine the concepts is to view the interpretation as the very product that emanates from the process to create meaning. One of the conclusions to be drawn is that the sensemaking concerns "authoring as well as interpretation, creation as well as discovery" (Weick, 1995, p. 8). Here two time-perspectives can also be added (Weick, 1995). The first perspective is based on the assumption that sensemaking takes place through the transformation of a problematic situation into a defined problem. In order to get to grips with the problem, the situation that can be classified as uncertain, an instance of making sense must take place in the situation, with the aim of establishing certainty or order. In the process, the individual assigned

to make sense selects component parts of the situation and demarcates them in order to focus the attention. The selected component parts are then put into a context that enables the sense-maker to observe and assess what is wrong and where required measures are to be directed. The second perspective is based on the assumption that sensemaking is a permanently continuous process and that it cannot be subdivided into any component parts. Sensemaking is a never ceasing process that goes on forever. For an individual to understand an event he must be sifted out of the main stream, but the major flow or the ongoing process still continues. Making sense may be described as a process that creates interpretations or meaning, but it may also be seen as a permanently continuous process. What the two perspectives have in common is that there is a sense-maker, that is, an individual who observes deviations in a situation or an ongoing flow. The deviation may be observed because comparisons are made from previous experiences and when a deviation has been observed, the deviation is formulated in words or as a text to an object, analysable by, on the one hand, the sense-maker, and, on the other, by others in his/her vicinity, that is in a social context. The object makes sense in relation to the context in which it was created and a cue based on the object develops; rendering the interpretation a component part of a cultural and social context. A given group's shared understanding of phenomena and deviations enables the group and its members to conceive of and communicate an object in a similar manner, which is of great importance to the process of sensemaking.

"Sense is generated by words that are combined into the sentences of conversation to convey something about our ongoing experience. … The goal of organizations viewed as sensemaking systems, is to create and identify events that recur to stabilize their environments and make them more predictable. A sensible event is one that resembles something that has happened before." (Weick, 1995, p. 106 and 170)

In the fifties and the sixties Sir Geoffrey Vickers (1995) started to make notes relating to observations that he had made throughout the 40 years he had been collecting experience relating to human behaviour. He opposed simplified ideas claiming that man was a target-seeker. The social process was viewed as a system, however, not from a cybernetic perspective, but rather as a system regulating the choice of different combinations. The control or the direction was not managed outside the system either, but instead the regulation was carried out internally within the system. Vickers regarded organizations as social units where the capacity to handle and coordinate relations was important; action was a question of handling and administering relations rather than making rational decisions that would enable the organization to attain its goals. Language, consequently, became an important medium for the formation of concept of the world and various social networks of conversations formed relations (Winograd and Flores, 1986). These relations could be strengthened by means of information systems. Different filters, via conversations, were created and continuously reproduced; the filters being part of the interpretation of the world. The "appreciative system" or "appreciative setting" was a central concept to Vickers and may be interpreted as a system of concepts or an overall understanding. The concepts and understanding were processed by the group in order to be used to enable them to interpret the world surrounding the group (Vickers, 1987). The consequence of previous experience is that new circumstances can be assessed using the previous experiences and the new experience alters the understanding of the next experience. In this process, concepts and understanding are constantly changing in a manner similar to the way in which reality continually changes.

"… the act of attributing meaning and making judgments implies the existence of standards against which comparisons can be made, standards of good/bad, important/ unimportant, etc. Finally, the source of the standards, for which there is normally no ultimate authority, can only be the previous history of the very process we are describing, and the standards will themselves change over time as new experience accumulates." (Checkland and Holwell, 1998, p. 100)

The system can also be viewed as a learning process where old experience helps individuals and groups to create norms used to interpret and act in a new setting in a meaningful way. The fundamental idea is that the management of a company is composed of individuals who want to act in a meaningful way. Checkland's research group added an interpretative perspective of the organizational problems that might arise and that could be related to information supply. It was also desirable to attempt to deal with, in a structured way, the unstructured prerequisites potentially applicable to the company management's problem-solving. One way of dealing with it, that was tried, was to sub-categorize the problems into sub-problems. The component parts could be modulated resulting in a better way of understanding how the problems could be solved. Another point of departure was that the social reality created in groups was constantly recreated in infinite social processes, a consequence of which was a need to explain both such groups concepts that are persistent and such that are changeable. Checkland's research indicated that groups, to a greater extent, want to create interpretations and encourage learning rather than create optimal solutions. In Checkland's (1998) latest book, the research group's research to date was summarized in the model they call POM. Their objective is to create, by means of the model, a structure and a language enabling us to make sense in organizations with special reference to information supply. Admittedly, reality is more comprehensive and complex than any model.

The POM Model's Seven Components

The POM Model consists of seven components and various relations between the components (see appendix 1). The first component describes how the author's view the concept of organization. Their basic assumption is that an organization is a social, collective unit with different roles, norms, and values (Checkland and Scholes, 1990). The latter were redefined successively depending on experiences created in the organizational context, in its discourse. One of the dilemmas of organizations is that they are, according to Checkland and Holwell (1998), an abstraction consisting of a social association engaged in certain activities to which a social behaviour has been attached. Consequently, an important question arises: What constitutes, on the whole, the existence of a given entity? The authors put forth the following claim.

"The answer can only be: the readiness of some people, usually large numbers of people, members and non-members alike, to talk and act as if there were a collective entity which could behave like a conscious being, with the ability to decide to do things and then make them happen." (Checkland and Holwell, 1998, p. 80)

Those who are members of the organization enter into a form of contract that may be found in formal employment contracts, but alternatively constitutes a psychological agreement between the organization and the member (Alchian and Demsetz, 1972, Macintosh, 1994). Departing from norms, values, and roles the members all form the agenda that the organization that has questions, criteria, resources, structures, processes, and goals they have defined. The agenda, in addition to the member's participation, is the foundation for the decisions and considerations that the organization makes to attain its goals that in turn lead to meaningful actions. Both the individuals and the group, or the organization as a whole, perceive the surrounding world as data-rich and select data consciously or unconsciously (Land, 1985). Data is defined as any kind of raw material or facts that can be used as single elements. This can be presented in various ways via texts, conversations, pictures or impressions. Data is selected in accordance with a pre-defined pattern or behaviour, which is the result of previous experiences and the values present in the group one identifies with. The data-rich world surrounding the members and the group is classified as the second component by the authors. The concepts that controlled the data selection are challenged and continuously reworked in an inter-subjective context and new concepts are created, a process classified as the third component. They are the basis of an inter-

subjective sensemaking. The authors base their discussion on a concept called, by Vickers (1987), "appreciative settings" that in turn could be translated as a system of concepts that create understanding. It is created at an individual level but may also be applicable to a whole organization because concepts adapt to and overlap the concepts adopted by the group. The fourth component consists in attaching different connotations to the data selected, which can be used for making assessments of the world and various standards. This may be regarded as a process starting as data is selected and a certain attention is paid to it, turning it into capta, a term used by the authors who describe it as follows.

"Having selected, paid attention to, or created some data, thereby turning it into capta, we enrich it. We relate it to other things, we put it in context, we see it as a part of a larger whole which causes it to gain in significance. The phrase which best captures this is probably 'meaning attribution'. The attribution of meaning in context converts capta into something different, for which another word is appropriate: the word 'information' will serve here, this definition being close to the way the word is often used in everyday language. This process, which can be both individual and/ or collective, by which data is selected and converted into meaningful information, can itself lead to larger structures of related information for which another word is needed; we may use the word 'knowledge'." (Checkland and Holwell, 1998, p. 89-90)

What the authors point out as important about the process is that the creation of information is an action by a human being. No machine can achieve as it is only man who can attribute meaning to data that has been paid attention to. The consequence of the attribution of meaning is that individual and/or shared perceptions and intentions are established. It can also be described as consensus being created around what can be described as a shared understanding and shared intentions, classified as component number five in the model. This is the basis of the actions, component number six, taken by individuals in the organization rendering the organization perceptible as an entity. The model's seventh component is the information system supporting the members' creation of meaning and their meaningful activities. This is performed through formal information system structures, various technological solutions, and the professional know-how required to maintain and develop the systems, to enable an appropriate accommodation of the systems to the needs of the organization (Checkland, 1981). The authors also emphasize that the model can be seen as a cyclic process.

"The process will be one in which the data-rich world outside is perceived selectively by individuals and by groups of individuals. … Perceptions will be exchanged, shared challenged, argued over, in a discourse which will consist of the inter-subjective creation of capta and meanings. Those meanings will create information and knowledge which will lead to accommodations being made, intentions being formed and purposeful action undertaken. Both the thinking and the action will change the perceived world, and may change the appreciative settings which filter our perceptions. Thus the process will be cyclic and never ending: it is a process of continuous learning, and will be richer if more people take part in it." (Checkland and Holwell, 1998, p. 104-105)

Viewed as a whole, the component parts create a process described by the authors as "processes for organization meanings" the so-called POM Model. By way of simplification, the authors argue, the model can essentially be described as having three functions. The first function concerns the organizational context where the creation of meaning and intentions takes place, consisting of components one to five of the POM Model. A consequence of this is that individuals in the organization can accomplish meaningful activity, component six in the POM Model, which is the second function. The third function is component seven in the model, that is, the information systems that lend support to the creation of meaning which results in meaningful activity. As a result the model's focus is more clearly directed towards making the information systems and sensemaking in organizations control meaningful activity. In terms of developing and analysing information systems in organizations, such components consequently become

central that concern, on the one hand, how different members perceive their world, and, on the other, which interpretations control the sensemaking that is fundamental for different intentions and aims in an organization.

Method

The study departs from methods like case studies (Hamel, Dufour and Fortin, 1993, Scapens, 1990, Yin, 1994) and field studies (Andersen, Borum, Hull Kristensen and Karnoe, 1995, Atkinson and Shaffir, 1998, Bruns Jr. and Kaplan, 1987, Checkland and Holwell, 1998, Ferreira and Merchant, 1992) which are based on an underlying assumption that there are certain systems, organizational systems, that, in one way or another, may be regarded as concrete empirical phenomena appearing independent of individuals in the context, such as managers or workers in a company. A consequence is that a phenomenon may be perceived independent of the observer studying it. The study started in the spring of 1997 with the first collection of data in the manufacturing company and in the service company in May. Throughout 1998 some supplementary data collection was performed. During that period contacts were also established with the third organization–the retailer. Data collection was initiated in the autumn of 1997 and continued throughout the spring of 1998. Eleven formal interviews were performed in each organization. The duration of the interviews averaged 1 to 1.5 hours, most were audio taped using a tape recorder. In addition to the above, a number of short informal conversations took place in situations such as corridors, over lunches, and over the telephone. In the three organizations, work place studies were also carried out in order to make observations of ongoing operations. Data collection was performed in different ways in order to produce as complete a picture as possible. In order to secure the data material collected and the quality of the investigation, the majority of the interviews have been tape-recorded making it possible to obtain a direct transcription of what was said in a certain context. One concrete result of the performed study was number of transcripts from interviews. One important task was to interpret the texts and arrange them in a context (Czarniawska, 1998, Silverman, 1993). The conversations that the texts were based on were a source and point of departure for the conclusions drawn. In the section below, the three organizations will be presented and empirical observations concerning three examples of processes that create organizational meaning will be put forward.

The Organizaions Studied

The three organizations that participated in the study, which this paper is based on, differ from each other in many ways, but at the same time also display certain similarities. They have different arenas for their operations: one of the organizations has customer contacts outside Sweden; the operations of another are primarily located in one area of Sweden and the third operates locally with strong geographical ties. The customer potential for two of the companies is very high and characterized by extensive anonymity between customer and representatives of the operations. While the third organization, a small number of big customers prevail and the organization has a pronounced and close collaboration with most customers. Ownership also differs between the companies. There is one case of co-ownership, one of government ownership, and the third company is owned by an American group. The subdivision and structure of the operations also differs between the organizations. One of the organizations is structured in a traditional production line, the second is geographically subdivided, and the subdivision of the third is based on products and commodities.

Company A

In simple terms the operations of Company A may be described as those of a subcontractor. The manufactured products are vehicle exhaust systems with associated component parts. Within Company A this is the main product system manufactured and developed, but the company also

manufactures and develops driver control product, such as instrument panels, car seats, hand control levers, and pedal stands. Additionally, the group also manufactures truck components. Operations at Company A are characterized by high technological knowhow and technologically advanced production. The company operates in the vehicle industry sector collaborating closely with a small number of major customers. This dependency on the customer or this form of collaboration is a prerequisite for fast and safe delivery, in accordance with standards required of the modern vehicle industry. As a result of the close collaboration with the vehicle industry, Company A has been affected by the falling market in the car industry.

Company B

Company B is a department store inside a shopping mall situated in an industrial area off the western access road to Kalmar, a Swedish city of 60,000 inhabitants. The shopping mall has slightly over ten shops of which one is considered a significant competitor. Car parking facilities surrounding the shopping mall are generous in order to draw customers to the department store from Kalmar and its suburbs. The department store boasts the traditional range of goods and its premises has fairly recently been renovated. Most of the checkouts face onto an open area where the entrances to several other shops are also located. The department store is part of a chain of department stores owned by a consumer cooperative. The department stores are independent sales entities, but each division within a store is part of a team coordinating activities within all the divisions of the chain of department stores. One of the most fundamental ideas controlling the philosophy is to create surplus value for the consumer members. This is achieved by way of supplying the consumer with a wide variety of products at low prices. The core activity is based on this relatively simple service that can be derived from the fundamental idea behind the consumer cooperative. Even though the core activity is to sell products to members and other consumers at a low price, the values are considerably more numerous and more deeply rooted that have controlled, and still are controlling how operations evolve and develop.

Company C

Company C operates in the mail delivery service. The service offered by the region's postmen is basically a simple one, to distribute incoming letters to the addressees in the region. However, it may also be described in more complex terms as the customer who pays for the service is not the recipient of the service. A consequence of this is that the postman who performs the service is not actually in contact with the party paying for the service. The Swedish government is the owner of Company C and has ordered Company C to perform letter distribution with national coverage in accordance with certain requirements, primarily concerning the scope of operations. The organization has a markedly hierarchical structure where the regional manager is part of a nationwide group of regional managers. They receive directives and funds that they bring down into their regional activities and allot them amongst the geographically organized distribution units. Each unit in turn is subdivided in a similar fashion, divided into geographical areas with a team of, on average, 8-10 postmen. The fundamental service, postal delivery, has not gone through any major change throughout the years, whereas the requirements of the service have changed in a revolutionary way. Via Company C, citizens must be able to get in touch with other citizens by way of messages, goods and payments. The operations are described by characteristic words such as trust, proximity, simplicity, and commitment. To attain this, the objectives are: satisfied customers, profitability, and work satisfaction amongst the staff. Company C's commitment is to be a nationwide distributor of individual and mass produced messages, newspapers, and magazines. There are misgivings that these commitments will decrease as a result of increased computerization, especially as a result of the increased use of email.

Three Processes that Create Organizational Meaning

In the three organizations, many meetings take place with the result that the various employees jointly arrive at opinions concerning how they will jointly understand different contexts. These opinions often form the basis of different types of planning and decisions purporting to involve the employees as participants in the operations. A form of management control based on the joint opinions – the organizational sensemaking. In the following section, three different examples of processes extant in the organizations will be described. The processes that create organizational meaning and that constitute the basis of management control.

For Company A it is very important that the product is delivered punctually and is of a high quality. These two variables are central measurement test values used for continuous evaluation of the operations. The activities performed to raise quality in production have become more sophisticated over the years and today comprise a well-developed and carefully prepared organization. Quality assessments are continuously carried out by a special unit within the organization. Their conclusions are recorded in various monthly reports that display how well the respective quality objectives have been met. The fundamental idea here, to maintain high quality is, in the longer perspective, a means to earn money and to keep the customers you have, which is an idea that has been pointed out by, for instance, the top executive of the group. High quality, few defective products and low rejection rate, means less work at correcting flaws and that the materials are used at the highest ratio as possible. In other words, high quality means that cost for extra work in connection with production flaws and costs for discarded materials are kept down. Any flaws that are detected are observed as early as possible in the manufacturing process by the various working units in the production. If the defects become more extensive, they will be registered by the quality group, which in turn reports it to the respective managers. Often they have already observed the defects in production and initiated discussions with the units concerned. Joint attempts are made to understand what has gone wrong and to devise the best way of dealing with the shortcomings. The unit concerned then writes down the plans of action selected to amend the problems plus different time plans and responsibilities are allotted in the group. To a large extent, the working group manages this quality work themselves and is only supervised by senior managers and the quality group. In the weekly meetings, the measures implemented are checked against the outcome of the actions. If there was a high rate of rejections similar processes are initiated and often carried out by the working group under the supervision of production managers concerned. In these matters, the production manager also receives the first signals and un-sophisticated measurement tests and controls are implemented to enable detection of where the defects occur, in order consequently to be able to analyse which measures are necessary. Preliminary results are subsequently confirmed in the monthly reports and the discussions in the working groups increase in scope. The work concerning quality and rejections is reminiscent of quality improvement activities. The difference being that, at the sub-supplier's stage, the effect of poor quality and high rejection rate is firmly rooted in cost-consciousness. To a large extent, work does take place at a relatively low level in the organization and clearly discernible planning and follow-up activities take place.

For Company B it is important to keep careful tabs on correct pricing and to ensure that stock turnover speed is maintained. Continuous assessments in the various sections are often a question of which products have sold well and which have sold poorly. If the sale of a product is low then a discussion is initiated in the section regarding the appropriate measures to take. The first stage of this discussion takes place between the employees in the department. The first talks are initiated by the observations made by the employees, which is based on the feeling the employees experience when they walk through and work in the department. At the next stage talks are initiated with the department store manager who reviews the reports, often on a weekly basis. If the rate of sales has been far below expectations talks are then initiated with a team at the national level, who are centrally responsible for different categories of goods. A set of

potential measures is decided upon jointly. This often involves measures such as lowering the price or launching a marketing campaign. It may also involve moving the products to another place in the department in order thus to create more exposure for the product. The desired result is to increase stock turnover speed and not to lose too large a portion of the margin. Similarly, different types of discussions take place between the shop walkers and the department store manager with regard to other areas concerning planning and follow-up. One obvious example is the planning of the working hours. The staff's working hours is one of the most important resources that Company B has at its disposal, the use that has to be carefully followed up. Hence, plans are made and results are checked in a detailed and carefully developed manner. Previous years results are the foundation of the overall personnel planning and the important holidays are the major points of departure. Including extra staff for salary payment days is another important variable. Each shop walker has his/her discussion with the department store manager to establish if there are any further situations that will demand any major increase in the amount of hours required. Thus, a joint understanding is established, that, in turn, is the basis for planning and control.

In the third organization, Company C, it is difficult to predict the quantity of letters, which controls the planning for the work roster. A consequence is that estimates must be made based on previous years and signals from the large companies. Subsequently, continuous discussions are being held at the operative level concerning which areas, and districts requires extra staffing or whether staff may be redeployed between different areas. Absenteeism and the need for substitutes is handled and solved in a similar manner via discussions between various representatives of the organization. In most cases, the discussions are initiated by the department manager who then holds discussions with the person holding overall responsibility. The solution is, subsequently, suggested to the staff working in the department. Similarly, operations planning and control are performed by means of a budget process starting at a national level. The national management hold discussions with the regional managers about the most recent result and their expectations for the next period. The requirements, in most cases the resources allocated, are then passed down to the regional level and discussions are initiated between the regional manager and the local manager for each district. When the requirements for the next period have formed a shared picture the resources are apportioned to the different locations. A similar allocation process follows, allotting resources down to each work group. Thus, a shared picture is formed relating to the demands on operations raised by employees and managers. This method of operation is a central part of planning and control.

Feedback to the POM Model

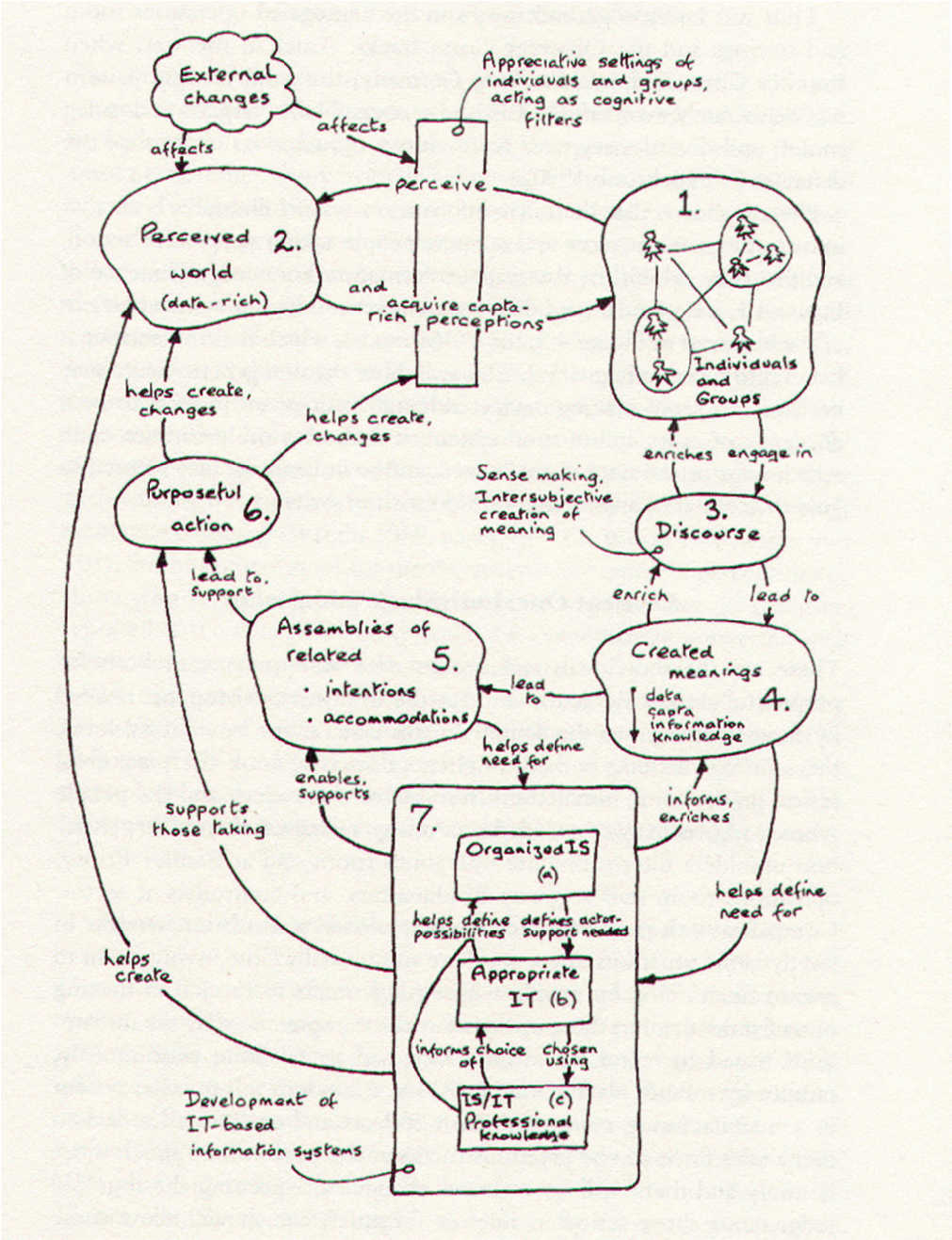
Use of the POM Model that describes the process of organizational sensemaking is a means of understanding and describing how employees in an organization form an opinion of its operations. The model's different components, described in previous sections, are the point of departure for subsequent feedback. In the companies examined, distinctive subdivisions are utilized. Company A is divided in accordance with product manufactured, Company B in accordance with types of products sold, and Company C in accordance with its geographical location of activity. The method of subdivision of operations in turn creates fundamental preconditions for the running of operations and for planning and follow-up. The next component of the POM Model concerns the operation's data rich environment. In one of the companies, observations made in the department are important, observations concerning the customers behaviour, that is to say, products they are interested in. In the manufacturing company, quality and rejection are examined closely, initially through observations, a method also extant in the third company. At the next stage the observations are confirmed through various types of reports. Impressions are an important part of the initial collection of data, subsequently confirmed by the formal reports. When different types of data have been collected, informally as impressions and

formally through reports, they are interpreted with help from employees at the department and managers involved with the department. This is common in all three companies where impressions and reports are regularly discussed. The department managers maintain a constant dialogue with senior managers and with the employees of the company. Together they make assessments that later constitute the basis for objectives and actions. These assessments appear in different forms, sometimes as documents and sometimes as informal agreements. The actions selected for implementation become yet another expression of the decisions made; the intentions and objectives agreed on. The three organizations have various types of computer support. The department store has a very advanced system that registers every purchase in real time deducting stock and updating gross profit. The postal organization has a performance measurement system enabling every work group to make comparisons with other work groups and thus evaluate its achievement. The subcontractor has a relatively moderate computer system level, where reports arrive once a month displaying a high level of aggregation. It may be stated that for each company the computer needs have been adapted to the preconditions applicable to the company.

Conclusions

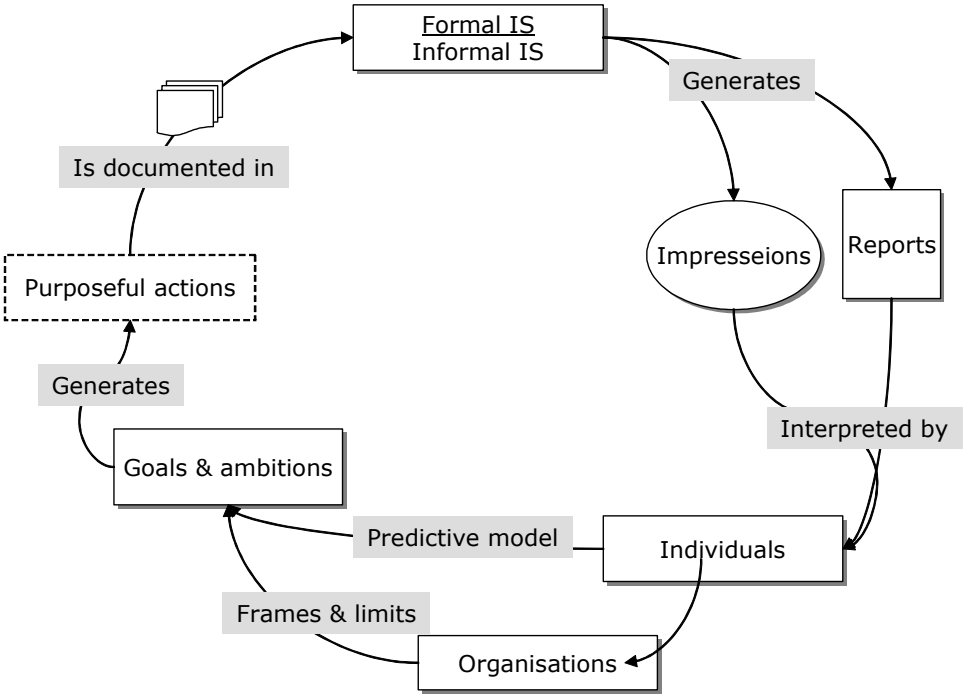
To clarify how organizational operations may be described in terms of the POM Model and its connection with management control, a simplified and somewhat concentrated model may be used. It implies that management control is a process that creates organizational meaning. The simplified model is seen in Appendix 2. The model's point of departure is the meaningful actions that the organization wants to perform jointly. These actions are documented in formal and informal information systems that in turn generate reports and impressions. These reports and impressions are then interpreted by the individual aided by the organization. The shared understanding of what creates success in the organization forms the basis of ambitions and target formulations. The targets then supply the frameworks and required corrections, if needed, enabling the organization to know which actions are meaningful and to put them to effect. The actions in Company A were aimed at creating high quality products. Any quality defects are documented and any increase in rejection will be observed in production. Employees of a production line will, subsequently, discuss with the product line manager and with each other regarding issues related to the failure and measures would then be taken to correct the quality defects. New targets are defined and actions taken accordingly. The result is documented and a new sensemaking process is initiated. In Company B, there is a strong focus on the customer buying the products and this is documented in reports and through the employee's observations. If a product were to sell less favourably for a period of time, it would be observed by the employees and later confirmed in the reports. The shop walker then opens up a discussion concerning the failure and how to increase the sales of the product. After discussions with national level managers of the organization and the employees certain measures are taken and the results are followed up. In Company C, appropriate staffing levels adapted to the quantity of mail is an important issue. Based on previous years experience as well as recent reports and indications, the unit at the operations level analyses the staffing level requirement. Staff is jointly deployed and a certain staffing level is established. This level is evaluated later and the conclusions reached form the basis for the next period. The three organization's operations are clear examples of the individual's active role in the process of organizational sensemaking. The actions in the organization that becomes a part of the organizational sensemaking is expressive of the planning and control continuously going on within the organization. In this sense, management control is concerned with the individual employee's integration into the group's and, indirectly, the organization's meaningful actions; actions that lead to the fulfilment of the shared goals and intentions.

Appendix 1



The POM Model (Checkland and Holwell, 1998, p. 106)

Appendix 2



Management control, a process that create
organizational meaning: a simplified model

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A Validation of the End-User Computing Satisfaction (EUCS) Towards Compterised Accounting System (CAS)

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Abstract
Purpose - This study aims to develop and validate an instrument for measuring end-user computing satisfaction in computerized accounting system (CAS) environment particularly in private sectors organization. Thus, the study aims to contribute to the existing body of knowledge in the area of information technology.
Design/methodology/approach - Theoretically, this study measures and validates the instrument of Doll and Torkzadeh EUCS (with some additional dimensions) among private companies. The study relied on survey design.
Findings - This paper revised and validated instruments for measuring end-user computing satisfaction (EUCS) in computerized accounting system (CAS) in private sectors organization. Descriptive analysis and factor analysis were employed in this study to measure and validate the factors contributing to end-user computing satisfaction.
Originality/value - The relationship between the management of an organisation and the information system are measured by the satisfaction of the users. This phenomenon encourages a more focused measurement to explain the overall satisfaction of the computerised accounting system (CAS).
Keywords: End-User Computing Satisfaction, Computerized Accounting System, Accounting Information System, End-User, Private Organization, Factor Analysis
Paper type: Research Paper

Introduction

Accounting Information System

Accounting is the service function that seeks to provide the users with quantitative information. On the other hand, AIS (Accounting Information System) is an information system that is designed to make the accomplishment of accounting function possible. AIS processes data and transactions to provide users with the information they need to plan, control, and operate their businesses (Romney et al., 1997:2). Previously, AIS (Accounting Information System) were performed manually on recording, summarizing and validating of data associated with financial accounting, managerial accounting, and tax compliance issues (Hollander et al. 1996). Now, AIS (Accounting Information System) can be performed with the help of computers. Contemporary IS (Information System) cannot function without computers and other technical means to measure primary information, gather and register it in carriers, process and transmit it to consumers. For this reason, computerized information systems (CIS) are designed and implemented (Mahdi et al., 2010).

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Accounting information plays an important role in the process of managing an enterprise's activity. In the last ten years, there has been an intensive process of implementing AIS in the world. These systems were implemented in large industrial and small trade enterprises. Later, implementation of AIS started in other enterprises and state institutions. The implementation of AIS is quite an expensive investment project for most Enterprises (Mahdi et al., 2010). Although the cost of AIS implementation is quite expensive, it also provides a lot of benefits. According to some researchers, AIS will help in improving performance measures and productivity. Gelinas (1990) considers the effectiveness of AIS as a measure of success to meet the established goals. The success of AIS implementation can be defined as profitably applied to area of major concern to the organization, is widely used by one or more satisfied users, and improves the quality of their performance. In addition, the quality of accounting information is also determined by other factors such as the level of primary information automation, functionality of computer software, integration of accounting and other types of economic information (Mahdi et al., 2010).

Measuring Information System

Many researchers defined end user computing based on their own objectives and setting of the study. Ives, Olson and Baroudi (1983) defines User Information Satisfaction (UIS) is one such evaluation mechanism as to extent to which users believe the information system available to them meets their information requirements. Chin and Lee (2000) defined end-user satisfaction with an information system as the overall affective evaluation and end-user has relating with his or her experience in the information system. They stated that the term "experience" could be made more specific to focus into different aspects related to the information system such as computing or training. According to Doll and Torkzadeh (1988), EUCS is the affective attitude towards a specific computer application by someone who interacts with the application directly. End-user satisfaction can be evaluated in terms of both the primary (application) and secondary user roles (inquiry and decision support application).This study deployed Doll and Torkzadeh definition of the end user computing and EUCS. The end user computing in this study is the people who interact and use the CAS such as financial officer, administrative officer, bursar assistant, account clerk and etc, and eventually they can interpret the report as in needed by the organisation. These end users were asked to reflect their satisfaction or perception on the CAS (Computerised Accounting System) in their own organisation.

In measuring the effectiveness of information system has proven to be difficult (Seddon and Kee Yip, 2002). In fact, MIS Quarterly described it as one of the most "haunting problems" of Management Information System (MIS) (Davis 1989). Since it is difficult to directly measure the quality and effectiveness of information system, researchers tend to adopt the indirect measurement of information system. One of the measurements of information system is End User Computing Satisfaction (EUCS). The relationship between the management of an organisation and the information system are measured by the satisfaction of the users. This phenomenon encourages a more focused measurement to explain the overall satisfaction of the computerised accounting system (CAS). Specific questions about certain information system, i.e. CAS, in relation to the factors affecting the end users computing system seem necessary instead of general questions.

Background of the Study

Since the beginning of 1980s, many researches had conducted survey in information system field highlighting the tremendous development in end-user computing world. In fact, the growth of end-user computing is one of the significant phenomena of the 1980s in the information management world (David, 1983). Business Week (1982) quoted an estimate from Dataquest, Inc. that the training industry would capture $3 billion of the $ 14 billion spent on personal computers by 1986. These phenomena give indications that the growth of the end-user

computing has already started more than 20 years ago. Furthermore, it is more complicated during the emergence of the borderless world through the introduction of Internet and other information technological advances and gadgets. For instance, according to research done by Nielsen Media Research-Media Index, the statistic of personal computer at home based on total adult in Peninsular Malaysia for the year 2005 is 13,139,000 compared with year 2000 is 11,212,000. It seems there is an increasing of personal computer at home aligned with the existence of information communication technology in Malaysia.

The tremendous adoption of CAS is actually has been influenced by many other factors as well. Breen et al. (2003) determined the factors that motivated the use of a CAS as well as the factors that hindered the introduction of a CAS. They reported that only 55% of owner-managers used a CAS whereby the most popular CAS is MYOB (54.9%). Furthermore, they found that the existence of accountant has influenced early starters to introduce a CAS so that small businesses have better records of their financial activities. Obviously, the introduction of a CAS should not be seen as a threat to the accountant, but rather an opportunity.

Moreover, the study by Breen et al. (2003) was designed to investigate small business usage of a CAS to ascertain if there are obstacles that prevent small business from migrating to such a system for both users of CAS and non-users CAS. The study identified a number of other motivating factors included the computer self-efficacy of the owner-manager, the cost and perceived benefits of the innovation, ability to pay for the innovation, having the time to implement the CAS and possessing the staff capable of using the system. Beside, the CAS users stated that they believed the software had a positive impact on the business. However, the CAS non-users stated two major reasons for not using the CAS because a CAS was not needed and would not add value to the business and owner manager lacked IT skills and knowledge to employ it.

Extensively, Bresseler & Bresseler (2003) identified types of accounting information system software utilized by small businesses and asked entrepreneurs whether they are satisfied with the implementation of their software package. Beside, the study also identified the most important variable regarding the choice of accounting information system software application. They suggested that entrepreneurs overwhelmingly chose software package that they found easier to use and were heavily influenced by consultants and business counselors when selecting software package. In addition, the most popular software package is Quick Books and more than half of the respondents are very satisfied based on ease of use or additional software features.

The Purpose and Significance of the Study

There is wealth of literature in the area of the measurement of satisfaction among end user computing. Further, it has had a long history within the IS field. Focusing in the area of end-user computing, a number of studies have attempted to capture the overall evaluation that end users have regarding the use of an information system; i.e. satisfaction, as well as the most immediate factors that form satisfaction (Doll et al. 1995; Doll and Torkzadeh 1988, 1991; Henry and Stone, 1994; Torkzadeh and Doll 1991). However, it seems clear that previous research have not attempted to validate the factors affecting the satisfaction of the end users of the CAS especially in private companies particularly in CAS or AIS. Yet, it is essential to determine the factors that contribute to EUCS while assessing the overall evaluation of information system. This study attempts to explore the factors that contribute to the EUCS among the private companies in Labuan F.T.

The Objective of the Study

This study aims to develop and validate an instrument for measuring end-user computing satisfaction in computerized accounting system (CAS) environment particularly in private sectors organization.

Thus, the study aims to contribute to the existing body of knowledge in the area of information technology. Further, the study provides the constructs to measure and evaluate EUCS among the private companies in Labuan F.T. Theoretically, this study measures and validates the instrument of Doll and Torkzadeh EUCS (with some additional dimensions) among private companies. In addition, this instrument is very useful in practice, not only for public sector but also for private sector towards the achievement of the excellent and better performance.

The remainder of this paper is organized as follows. A review of related literature on End-User Computing Satisfaction and research questions is discussed. Next, the methodology employed in this study, research instruments used and data analysis method involved are described. Finally, the empirical results and discussion of the study are drawn.

Literature Review

The scope of the discussion is related to EUCS; the previous factors that contribute to the EUCS, Doll and Torkzadeh Model (1988); i.e., content, accuracy, format, ease of use, and timeliness and the modification made by Chin and Lee (2000), i.e. satisfaction with system speed, and system reliability. The model will become the fundamental guidelines to examine factors contributing to EUCS in finance department among private companies.

EUCS model is the extension of User Information Satisfaction (UIS) model, which previously had been developed by Ives, Olson and Baroudi in 1983. There were quite numbers of studies done by information system researchers treated User Information Satisfaction (UIS) as their dependent variable. Hamilton and Chervany (1981) stated that several information system researchers have suggested user satisfaction as a success measure for their empirical information system research. These researchers found that user satisfaction is appropriate when a specific information system was involved. Meanwhile, McKinsey & Company (1986) studied the chief executives' satisfaction in their attempt to determine the success of the overall Management Information System (MIS) effort.

In study by Amoli and Farhoomand (1996), they used structural equation modelling techniques to explore the relationship between EUCS and user performance. In their study, it was found that six-attitudinal dimensions of EUCS account for a significant portion of the variation in user performance. Chen et al. (2000) had identified the underlying factors of end-user satisfaction with data warehouses and had developed an instrument to measure these factors. The study demonstrated that most of the items in classic end-user satisfaction measure are still valid in the data warehouse environment, and that end-user satisfaction with data warehouses depends heavily on the roles and performance of organisational information centres.

Heilman and Brusa (2001) evaluated the reliability and validity of a Spanish version of the User Information Satisfaction (UIS) short form (Ives, Olson and Baroudi, 1983), and used the instrument to investigate user information satisfaction among employees of organisations in northern Mexico. Results indicated that Mexican computer users have positive attitudes toward and are generally satisfied with their employers' information systems, especially with their IT staff and services. On an individual scale assessment level, the users are least satisfied with the level of user training they received.

Seddon and Kee Yip (2002) provided an empirical evaluation of three user satisfaction measures for use with computer based general ledger accounting systems. The three measures tested are Ives, Olson, and Baroudi's User Information Satisfaction measure, Doll and Torkzadeh's EUCS measure, and a composite measure that includes questions specifically related to the features offered by general ledger systems. The results from the analysis of the data suggested that Doll

and Torkzadeh's is a more useful measure of satisfaction with general ledger systems as compared to Ives, Olson and Baroudi's UIS.

Unlike the other researchers, Pather et al. (2003) argued that the advent of e-Commerce has shifted the location of the traditional user of Information Systems out of the physical domain of the organization or business. E-commerce businesses now have to deal with a new type of user viz. the e-Customer. Thus, they disputed that established instruments that measure user satisfaction of IS in traditional (brick and mortar) businesses are not completely appropriate. The authors, building on a comprehensive literature study, derived an appropriate model for exploring the measurement of e-customer satisfaction in the South African context.

Markovic & Wood (2004) addressed the issue of user satisfaction with a computer lab in a university. Both formal and informal data gathering techniques were used to provide comprehensive data for this research. Data was gathered from both users and managers in order to provide a complete picture of the current situation. This data led to a research study of user satisfaction among students and support staff. The research revealed that satisfaction with hours and software and hardware performance had the greatest impact on user satisfaction followed closely by quality of support staff.

Bengts (2004) studies usability as a constituent of end- user computing satisfaction. Different measurement instruments and rating scales for user satisfaction have been created; however, the relationship between satisfaction and usability remains unclear. A web-based system with three different user interface alternatives was implemented and the system was used by information technology students to practice SQL-queries in a university course. 43 students reported their preference and the underlying reasons by answering both structured and open-ended questions in a web-based questionnaire. The results also indicated that availability of desired features, simple interaction and user-control are as constituents of satisfaction more important than simple screen design and error- free usage.

Huang et al. (2004) argued that while end-user computing satisfaction has been studied extensively, new aspects such as purchasing convenience, product prices in the system and product delivery have to be included. In their study, they developed an instrument for reliably and accurately measuring business-to-employee success. Test–retest reliability and construct validity were examined. Finally, they concluded that convenience, delivery, interface, accuracy, price and security influence employee assessments of satisfaction. Managers can use the instrument developed in their study to assess the success of their business-to-employee systems.

Factor Analysis in EUCS Research

In Doll and Torkzadeh (1988) study, the data was examined using principal components analysis as the extraction technique and varimax as the method of rotation. They found six items need to be deleted from 18 item instrument because those items have many multiple loadings for each item ("do you find the output relevant, do you feel the output is reliable, do you find the system is dependable, are you happy with the layout of the output, is the output easy to understand, is the system efficient").

According to Xiao and Dasgupta (2002), their study has developed and validated an instrument measuring user satisfaction in a web-based environment of the end-user Computing Satisfaction (EUCS) particularly internet portals' users. They found that a revised instrument with some changes to the EUCS instrument with some changes to the EUCS instrument is still valid in measuring user satisfaction. In this factor analysis, the principle components analysis was used as the extraction technique and varimax was used as a method of rotation. The factor matrix consists of 12-item instrument in five determinants (content, accuracy, format, ease of use and timeliness). They found that the factor loading for each item is above 0.7 and only one item is very close to 0.7 which is ask regarding "is the information is clear". Finally, the Xiao and Dasgupta keep all the factors as in the instruments. However, as in the item-total correlation, all

factors have correlation coefficient greater than 0.4 except one item shown 0.139 for the question "does the system provide sufficient information" and they dropped the item.

Then, study of Wang et al. (2001) develops a comprehensive model and instrument for measuring customer information satisfaction (CIS) for web sites that market digital products and services due to the current models for measuring user information satisfaction (UIS) and end-user computing satisfaction (EUCS) that are perceived as inapplicable as they are targeted primarily towards either conventional data processing or the end-user computing satisfaction. They also examined using principal components factor analysis as the extraction technique and varimax as the orthogonal rotation method. In the 21-item instrument that consists of seven determinants (customer support, security, ease of use, digital products/service, transaction and payment, information content and innovation) which explaining 82 percent of the variance in the dataset. Furthermore, the significant loading of all items on the single factor indicates unidimensionality. Beside that, the criterion-related validity is assessed by the correlations between the criterion and the 21-item scale which found criterion-related validity of .876 and significant ($p< .000$). Moreover, Wang, et al. (2001) also applied correlation matrix to evaluate the convergent and discriminant validity of the 21-item instrument that have been developed. In this finding, they found that the correlations are significantly different than zero and large enough to proceed with discriminant validity analysis. In overall, the CIS measurement model contains traditional UIS construct (information content), dimensions much the same as EUCS construct (ease of use) and special factors making up the CIS construct (transaction and payment).

In addition, Pikkarainen, K. et al. (2006) study aims to test and validate the End-User Computing Satisfaction (EUCS) model in order to investigate online banking users' satisfaction with the service. They employed an exploratory factor analysis and confirmatory factor analysis to test the validity of EUCS model that consist of content, accuracy, format, ease of use and timeliness. However, they found that banks could improve EUCS by concentrating on the three constructs (content, ease of use, accuracy) which indicate the customers' satisfaction by personalizing the service, allowing easier and more convenient use experience. In this research, the Bartlett's Test of Sphericity (sig=0.000) where variables correlate with each other and the Kaiser-Meyer-Olkin (KMO) score 0.825. It shows that factor analysis was appropriate and they used principal axis factoring with varimax rotation. They found different results from original EUCS model that represents content, ease of use and accuracy based on cronbanch's alphas for the factors (content=0.89, ease of use=0.83, accuracy=0.94). In addition, they also found that the original five factor EUCS model is not suitable in the context of online banking. However, the others three factors from the original model are confirmed in measuring EUCS of online banking particularly are content, ease of use and accuracy.

Based on study by Cai, S. et al. (2007) that developed an instrument that measures all the essential aspects of EUCS, including service quality satisfaction as one of the key determinants of EUCS. In this study, the satisfaction was measured by using Kettinger and Lee (1997)13 item IS Adapted SERVQUAL and information quality were measured by using the 12 items of Doll and Torkzadeh (1988) EUCS measure. Researches employed a principal component analysis with a VARIMAX rotation. They found 22 item scales for measuring EUCS and four factors were extracted with a high loading greater than 0.6 on their primary factors, each factor had eigenvalue greater than one and the variance explained greater than four percent. The four factors are relationship service satisfaction (adapted from responsiveness, assurance, and empathy), information satisfaction (construct from content and accuracy items), system satisfaction (construct from format and ease of use items) and service reliability satisfaction (construct from reliability items).

Additionally, Abdinnour-Helm, S.F. et al. (2005) had revised and revalidates the End-User Computing Satisfaction (EUCS) instrument to measure satisfaction with a Web site from

usability perspective particularly important given the increase significance of the Web and the uniqueness of the Web as a computing environment. They employed confirmatory factor analysis and in-variance analysis to study the underlying structure of the adapted EUCS. They found that the EUCS is valid and robust instrument in the Web environment and only timeliness need further refinement. This is because the item "Did the side provide up-to-date information?" did not load well on the timeliness factor and indicated that the relevance of this item for the Web is different that the other computing settings for which the EUCS has been revalidated.
Conclusively, even though the results are mixed, most of the previous studies shown that this instrument is valid and reliable to measure the satisfaction among the end user computing.

Research Methodology

Respondents

This study relied on survey design as it deemed more appropriate compared with other designs of research to achieve of the study. The population of this study covered the end-users of CAS at private companies in Labuan F.T. However, only 300 from 400 list of private companies' being selected due to their active operation. This list has been taken from Companies Commissions of Malaysia (SSM). We have distributed 3 questionnaires for each company and the total population are 900 respondents. Sekaran, U. (2003) has stated the sample should be taken for this population are 269 respondents.

Instrumentation

Basically, the instrument of this study is based on the instruments, which was developed by Chin and Lee (2000). It presents a new set instrument while focusing on the same five construct domains. They are: content, accuracy, format, ease of use, and timeliness (Doll & Torkzadeh, 1988); and satisfaction with system speed (Chin & Lee, 2000). According to their findings, the relationship between the overall measures of satisfaction than the baseline model is expected to relate strongly. However, based on the related literature as discussed earlier, this study proposes another dimension, which is system reliability. This dimension is already tested on the validity and reliability during the pilot study. The value of the Cronbach's Alpha of 0.70 indicates that the instruments of this study are acceptable and reliable to measure what they are supposed to measure.
For the purpose of this study, the instruments are adapted from Chin and Lee (2000) and Doll and Torkzadeh (1988). The table summarises the justifications of the selection of the instrumentations. However, some modifications have been made to enable the instruments are fit to be used in the CAS environment. For instance, "Does the system provide the precise information you need?" is modified to "Does the CAS provide the precise information you need? This will ensure the respondents are kept reminded that the system is CAS.
The questionnaires are also attached with a cover letter from the researcher explaining the purpose of the study and the questionnaire. The questionnaires are divided into two sections. The first section is for the dimension of EUCS and the second section is for the personal information. For the first section, it was divided into 6 parts namely: (1) Part A -Content, (2) Part B - Accuracy, (3) Part C - Format, (4) Part D - Ease of Use, (5) Part E - Timeliness, (6) Part F - Satisfaction with System Speed and (7) Part F - Satisfaction with System Reliability. The second section is about the personal information of the respondent. These include their gender, education background, position, and computerised accounting course. A five-item scale was used, where 1 = never; 2 = some of the time; 3 = about half of the time; 4 = most of the time; and 5 = always. The instructions requested respondents to circle the response which best to describe their satisfaction level with the application of computing system.

Data Analysis and Discussions

Respondents Profile

Table 1: Respondents Profile

Current Position in Department	Frequency	Percent
Bursar	1	.4
Vice Bursar	1	.4
Bursar Assistant	2	.7
Accountant	41	15.2
Accountant Assistant	28	10.4
Financial Officer / Controller	1	.4
Financial Officer Assistant	5	1.9
Information System Officer	4	1.5
Information System Officer Assistant	2	.7
Data Processing Operator	2	.7
Data Processing Operator Assistant	3	1.1
Administrative Officer	6	2.2
Administrative Officer Assistant	9	3.3
Administration Clerk	34	12.6
Accountant Clerk	55	20.4
Account Clerk	41	15.2
Other (please specify)	34	12.6
Gender		
Male	107	39.8
Female	162	60.2
Level of Education		
Master or higher	17	6.3
Degree	82	30.5
Diploma	92	34.2
SPM / STPM	78	29.0
Tenure in Current Position		
less than 2 years	70	26.0
2-5 years	107	39.8
5-10 years	60	22.3
more than 10 years	32	11.9
Tenure in Current Organization		
less than 3 years	105	39.0
3-15 years	118	43.9
15-25 years	38	14.1
25-35 years	8	3.0
Attendance of any Computerized Accounting Courses		
yes	186	69.1
no	83	30.9
Possession of any Additional Computerized Skills		
UBS	102	37.9
MYOB	26	9.7
LOTUS 123	43	16.0
PeachTree	12	4.5
MrAccounting	24	8.9
QuickBook	7	2.6
Others	55	20.4

Table 1 shows more details of respondents regarding current position in department, gender, level of education, tenure in current position and organization, attendance for any of