



An Effective Evaluation of the Impact of Hidden Profiles in Decision Making Process, in an Ever Dynamic Enterprise Environment

Mobey Emmanuel Tardzenyuy

School of Management, Shanghai University, China

Abstract:

In this paper, the effective evaluation of hidden profiles and its impact in the decision making process is carried out with emphasis in the ever dynamic enterprise environment. Decision making is an integral part of human life. It is these decisions that lead to the results of human activity. However decision makers do not always make the right decisions at every given opportunity with it numerous limiting factors, which hidden profiles are just a part.

The fast evolution of the business world makes decision making a more important research area than before. This is because it is only in making quality decisions i.e. the right decisions at the right time and the right place that enterprises achieve their goals to satisfy their reason of existence; through value added decisions. As business activities affect people across the spectrum of social life, it becomes necessary that decisions be made in groups to ensure they are acceptable. Groups are said to perform better than individuals in decision making. Some researchers however postulate that in certain conditions and situations, groups are no better than individuals.

Existing models for group decision support systems are mainly interested in ensuring a high level of consensus and participation in group decision making, but they do not address the problem of decision quality and adequacy; adequately, here this paper puts more insight in this perspective.

Therefore this paper diagnoses the implications of hidden profiles, how hidden profiles can be revealed in an evolving environment. This will help reduce the frequency of decisions made in error as a result of hidden profiles.

Key terms: Hidden profiles, indecision making process, decision support system, dynamic enterprise environment, decision quality and adequacy.

Introduction:

A hidden profiles are a paradigm (a typical example or pattern of something; a pattern or model) found in situation where part of some information is shared among group members (i.e. all members possess this information prior to discussion), as opposed to other pieces of information are unshared (i.e. information known to only one member prior to discussion). Furthermore, shared information and unshared information have different decisional challenges, and the alternative implied by the unshared information is the correct one given all information available to the group. However, no group member can detect this best solution on the basis of her or his individual information prior to discussion; this can only be found by pooling the unshared information during group discussion. Hidden profiles interact with the shared information bias to produce poor decisions therefore challenging the decision quality and adequacy.

The evolving enterprises are prone to constant change. Decision making in such enterprises becomes more and more difficult as the enterprise grows larger and more complex in terms of size and services (Ashwin, 2010). Goals are met in any human endeavor only when the right decisions are taken as the need arises. Decision-making as such becomes of prime importance as we talk about meeting goals. Decision-making sometimes becomes very difficult as a decision taken today may not be valid



in the near shortest future due to the dynamic nature of the enterprise environment (Alonso et al, 2010). Also another problem that needs a separate decision may arise due to the first decision, if all ripple effects of the first decision were not considered.

To consider every aspect of an enterprise that would be affected by a decision is not practical, even with the help of modern day software. However decision support systems (DSS) are applicable. The development of computerized plat-forms for decision making has greatly increased the effective and efficient management of enterprises decision making process, this is because many shortcomings of decisions making and the decision taken can be exposed and avoided when the decisions are being made (Ashwin, 2010). With the help of software tools, the decision making process can take less time and less human resources than when it depends only on the efforts of individuals, consequently less costly to make decisions. With web based technology, group decisions can be taken without necessarily assembling experts in the domain. This in turn reduces the cost that would incur the enterprise if it were otherwise (Alonso et al, 2010). Even if the experts are in the same locality, group decisions still suffer problems of coordination. A computerized plat-form does not only solve the problem of displacement but also assist with that of coordination (Perez et al, 2010).

In evolving and dynamic enterprises, structures and functions are susceptible to change in time and space with assorted demands. These demands could be due to the business trends, customer satisfaction, worker satisfaction, the whims of the enterprise boss, societal pressure, etc. Confronted with such demands the stakeholders have to take decisions that still leave the enterprise focused on its goals and objectives. Decisions made may sometimes be faulty, especially when the solution alternatives available seem to be all correct. The choice made is implemented either on paper or simulated, and the results presented to the stakeholders. If the results are satisfactory to all, the choice is validated. If not the group goes back to determine the conflicts that arise. This process may appear very long but as Ashwin (2010) says; if a manager is afraid to spend in making good decisions he is however going to spend more as a consequence of staying aloof.

With the boom in technology today, the business environment evolves so fast that most enterprises may not afford to remain rigid. Consequently all enterprises need to evolve. That is they should be able to generate novelty and innovate, thus enabling adaptation in ways that exploit new resources or allow them to persist under unprecedented environmental dynamic regime shifts. However the changes brought about by evolution can have adverse consequences on the goals and objectives of the enterprise. According to Ashwin (2010), generation of novelty involves getting to the unknown, an exploration rather than a rational act and the search for a beneficial innovation which carries with it a significant risk of failure.

Minimizing this risk of failure through the decisions we make; the success of any enterprise depends on the managerial skills, notably in the quality of the decisions made, be they by the manager solely or by a group of experts. Hence any decision-making algorithm has to help enterprises optimize to meet their goals and objectives.

Human ability to solve problems becomes limited when a wide range of information or knowledge areas is required (cognitive limits). It becomes therefore imperative on individuals or groups to use laid down rules or steps in decision making that will allow them to recall what is necessary for them to make good decisions (decision quality). Since it is clear that one cannot recall all that surrounds each available solution alternatives, it will be of interest to know what can be done in order to trigger the revelation (recall) of information about such an alternative. In a nutshell how can we decode the hidden profiles of group member without biases and other limiting factors? Therefore the aim of this paper is to develop a model for group decision making that will improve quality of decisions made, by triggering information sharing (discussion) with the help of course(s) of action



(solution) analysis, partly done by the decision support systems (DSS).

The dynamic environment of the enterprise is a hidden member of the panel of decision makers with the greatest hidden profile. The environment holds the known and the unknown information. As the members of the group works hard to decode the hidden profile of the environment, the dynamic part of the environment adds, subtract or modify the unknown and the known information making it more difficult and complex for the group members to have a mastery of the existing information, giving the hidden profiles more weight on the outcome of the decision quality.

Literature Review:

These models are important references in our paper. They lead us to discovering what has been done and what is not done in group decision support systems. We will be keen on the processes of these models and how they ensure:

- 1. The acceptability of decisions made;** it is always very important in democratic leadership and administration that all parties to the decision accept the decisions made. It is therefore also of interest to know whether or not the decision made is acceptable by the majority, if not all (consensus).
- 2. The correctness of decisions made;** to meet goals and objectives of the group they should be able to make correct decisions when the need arises. We will therefore be looking for what guarantees correctness in decisions made using these models.
- 3. The participation of people involved in group decision making;** for people to easily adopt a solution they should be part of the decision making body. We will therefore be looking for what guarantees high participation of group members in GDM problems (Tim Barnett, 2011).

According to Lightle (2009) decision makers sometimes choose an *inferior* alternative over a *superior* alternative because they have common information favoring the inferior choice. This is due to the fact that private information (hidden profile) favoring a superior choice may not be recalled or decoded as most participants in decision making do not have this information and the person that forgot is not reminded or some constraints limits the exposure of the information and experts may even end up taking the wrong choice making the decision quality questionable (Gwen et al 2004).

Alonso *et al* (2010) solve the problem of group decision-making (GDM) by using the computer aided moderator (in a web based consensus support system for GDM), that tries to reduce the differences and the incompleteness of the preferences of experts. However, this solution fails to address the problem of forgetfulness, biases, preferences, and ethics in the minds of experts. Therefore experts using this system can reach a high level of consensus but the decision taken is not guaranteed to be the best.

Perez *et al* (2010) propose a solution to dynamic GDM problem where choice alternatives can change throughout the decision-making (DM) process. Their solution also solves the problem of mobility as they use mobile technology. However enterprises most of the time, will deal with evolution problems whose solution (choice alternatives) will not only be proposed but can be deduced or streamlined from a variety of options that may not depend on the experts only. This way the process will still be very slow if experts have to recall and analyze by themselves, all the background knowledge about the problem. Still, the inability to share private information is a drawback.

Herrera *et al* (1994) present a consensus model in group decision making under linguistic assessment. By linguistic assessment they mean that participants in GDM give their preferences on alternatives in natural language and the machine quantifies (looks for its equivalent value) in fuzzy preference relation. Here their preoccupation was to be able to make participants in GDM process give their preferences in another form when they are unable to rate with precision their preference of one alternative over the other using fuzzy logics. Enabling participants in GDM present their opinions in



natural language was novel. The system can now evaluate the linguistic terms and transform them into fuzzy preferences relations. A linguistic term is therefore a word or a phrase in some language (natural or artificial). Despite their novelty in making participants express their preferences in a convenient way, they do not however differ from what we have seen in terms of other processes in GDM.

According to Felix et al (2007), group decision making is more costly than individual decision making or an opinion poll. It necessitates the presence of several individuals, and it is more time consuming owing to information exchange and discussion. It becomes even more costly when the right decisions are not finally taken.

Each enterprise should therefore seek decision-making processes that lead to the most appropriate and most acceptable decisions (Peter, 2011). Their decision-making procedures (algorithms) must reliably ensure the quality of decisions.

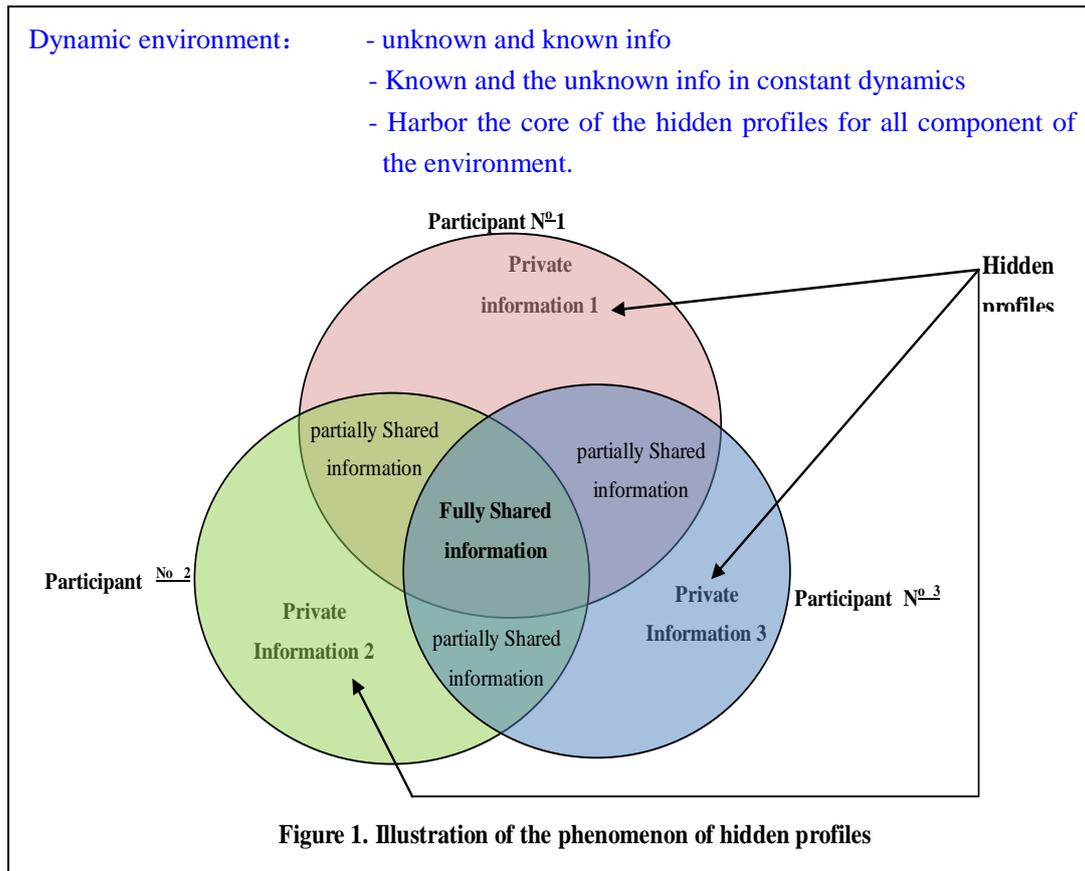
According to Lightle (2009), groups perform better than individuals or opinion polls in decision making. However from the above discussion we gather that there still exists a problem of attaining quality even in group decision making. Since it is not clear what procedure will ensure that the right decisions are made, meeting enterprise goals and objectives is therefore not yet a surely attainable quest.

With reference to our review of literature, meeting goals of an enterprise entails taking the right decisions. But these models however do not guarantee that the right decisions are made, despite their contributions in encouraging participation of group members and ensuring consensus. As explained by Felix et al (2007), the phenomenon of hidden profiles can “blindfold” decision makers from seeing the right decision with the ultimate decision quality.

The problem, we observe that in most of the feedback mechanisms of the models seen in the works above emphasis is laid on advising individuals who dissent from the position held by the majority to comply with the majority’s stand point. The majority, however, is not always right. Therefore we cannot completely rely on these models for the right decisions to be taken that ultimately gives us the managerial decision quality we deserve to meet the goals and objectives aspired (Alonso *et al* 2010, Perez *et al* 2010, Herrera *et al* 1994).

The problem is not just taking decisions that are acceptable to all (i.e. through consensus); the decision taken should be the correct one in its given context. Thus the shortcomings and merits of solution alternatives need to be assessed. For example though group decision-making, is seen as more advantageous than individual decision-making, its quality is often found wanting. The “hidden profiles” problem is a possible cause: we need a model that can trigger decision makers to share privately held information that are decision-relevant without bias and constraints (Gwen *et al*, 2004).

Given a set of alternatives from which the group has to make a choice, each and every individual has his/her own reasons for choosing one but not the others. Sometimes there are reasons for choosing some alternatives or rejecting others that are common to all or most group members. During discussion it is these common reasons that dominate (they are a common point of accord) (Felix *et al*, 2007). The common reasons are known as shared information. However the group members may hold information individually that, when combined will override the shared information in influencing the choice of the group. This decision-useful information held by individuals privately is known as hidden profile (Gwen *et al*, 2004).



Many researchers are interested in this hidden profile phenomenon, most especially those in communication and management sciences (Lightle, 2009; Felix et al 2007; Efram et al 2005).

Methodology: Survey on the barriers to decoding hidden profiles:

Hidden profiles will have a profound effect in the decision making when there is lack of information sharing in which the decision quality and adequacy may be trampled upon. Free and willing information sharing will on the other hand optimize the quality and adequacy of decision and the ultimate goals of the enterprise. Here it can be termed decoding the hidden profile among group members in the decision process panel. But this is always hampered by some barriers that we are going to examine next.

A variety of limiting factors affect the willingness to share private information in group decision making process. Group members first needed to feel secured in every perspective of the decision making process i.e. in their personal, personality and jobs security. They need to know that the act of sharing knowledge with their counterparts, co-workers would not affect security of their job in any way. Perhaps, more importantly, office politics had the potential to become a barrier for effective collaboration and information sharing, diminishing any eagerness toward information sharing. The survivor-type mentality in group decision making may make the process an illusion where teams are pitted against teams in the process.

Trust, respect and comfort are other pertinent variables that also affected the tendency towards willingness to share information. It is necessary that group members need to have the trust and respect from and to their co-workers. With respect to the diversity of the modern organization and groups in decision making, one of the most important factors that seemed to affect willingness to share information is the level of comfort in dealing with others. If there is a language or cultural barrier, that



level of comfort may not effectively exist, thereby, diminishing the level of effective information sharing.

Essentially, it is difficult to find the information that the group members needed so that they could effectively collaborate and share the information. Coupled with the continuous environmental dynamics; the known and the unknown information continue to metamorphose i.e. new information is added, old information modified and the whole system becomes just chaotic.

Effective information sharing in group decision-making could be boosted through senior management's active involvement in promoting information management within the enterprise and integrate it into the organization's performance management and measurement programs. Utilizing "metrics" to measure how it was used, when it was used and how effective it was.

Finally, IT support is critical to effective information sharing. In some instances the IT department is seen as the barrier, effectively limiting what information that could be shared across teams and among members of teams. In other cases, IT is castigated for not providing modern technologies that supported information sharing. It should be noted, however, that IT fully support the move into these technologies.

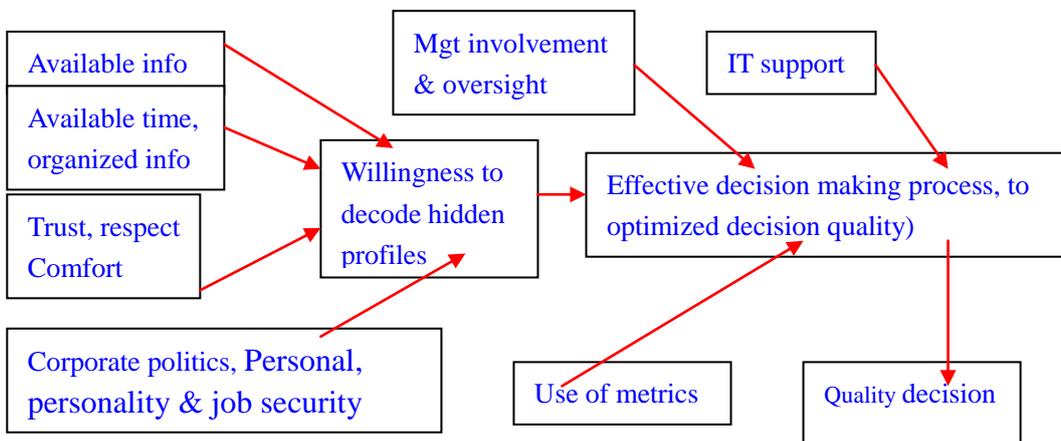


Figure 02: Key factors affecting the decoding of hidden profiles in group decision making process.

These traits in decision making process have a profound impact in the ultimate outcome of the decision quality and particularly the "decision" when these factors are lacking we notice that the decision quality and the ultimate decision will be a fiasco.

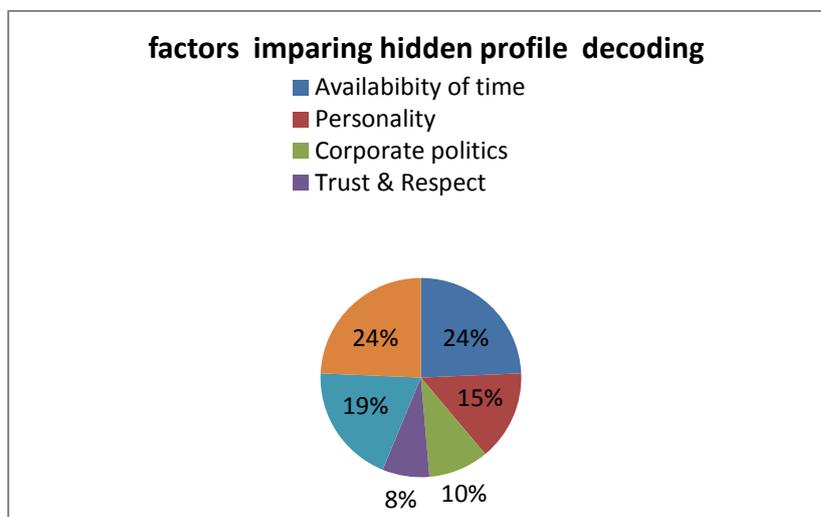


Figure 03: Survey of the impact of hidden profiles in public/private corporations in Cameroon.



The pie chart portrays the preferences given to various factor by the 100 department heads of two ministries i.e. Finance, ministry of commerce and industry and three private corporations (MTN Cameroon Plc., World Wide Fund For Nature, Orange Cameroon Plc.). Each member takes into consideration the factor chosen before giving any private profile needed in group decision, if the factor is at stake the private information may (will) not be given by the participant.

But what is a decision quality? Decision quality require an overview of the best practices for making smarter, faster, and more creative long-term right decisions which includes these pillars of making better decisions.

- The framework that defines the requirements of a good decision is used,
- Dialogue decision process, a collaborative approach to address complex issues to reach quality decisions.
- Decision analysis, the concepts and tools that produce clarity about the best choice in an uncertain and dynamic environment; takes into account the dimensions of decision quality which embodies the following:
 - a) A useful frame - are we answering the right question?
 - b) Creative yet feasible alternatives - having a small set of wide-ranging choices
 - c) Meaningful and reliable information, particularly about risk
 - d) Clear preferences and trade-offs
 - e) Sound reasoning, and clear communication about complex issues
 - f) Commitment to action.

Enterprises can make better decisions using a process that ensures decision quality and adequacy by setting the right frame, considering alternatives, gathering meaningful data, clarifying values and tradeoffs, using logical reasoning, and committing to action. By focusing on each element and involving the right people at the right time in the right way, organizations can create significant value and avoid mistakes that erode value. Getting strategic decisions wrong, leaves value on the table, as human minds are not wired to intuitively make high-quality decisions. Decision makers are often unaware of the opportunity loss from “good enough” decisions, and organizations punish real losses more harshly than opportunity losses. In addition, the group members may assume that agreement achieves decision quality, or may miss the opportunity to declare a decision. In certain circumstances of decision making, other two dimensions regarding ethics and the competence of the decision makers are in account i.e., they are making the decision without any impairment to their judgment.

“Decision Quality” in decision making requires quality in each of the dimensions above. A failure in any one will result in a failure of the entire decision process. For instance, if the frame is poor, it does not entail how good the alternatives are, or the information, preferences and reasoning. The group may even have had the commitment to a recommended course of action i.e. genuine willingness to decode the needed hidden profiles, yet we may have a great solution to the wrong problem, then the group have wasted time altogether. Decision quality is only as strong as the weakest element in the six dimensions above, with respect to hidden profiles which is our subject of concern,

Information is “what we know” and the critical dimension of decision quality. For decision making we need complete information about the future, so we should not confuse information with “data” which does not exist about the future. Too little, or poor quality, information is clearly not ideal for decision making, which can be just as bad to have too much information.

Decision makers should be aware that they can deceive themselves deliberately or unknowingly and each member should have group interest over his/ her own interest in so doing, the problem of hidden profiles can be minimized. Also in group decision making, a neutral member should



be incorporated to evaluate and cite cases where member interest surpasses group interest so that reconsiderations can be made to optimize decision quality and adequacy.

Conclusion:

Spending more than the value of information, particularly new information will not change the decision (i.e., the value is zero) and a hundred percent decision quality is when we are knowledgeable and ready to mastermind the hidden profiles. When our information is correct and explicit, particularly about uncertainty, important gaps are filled particularly the hidden profiles in the group setting and we know the limits of our knowledge. In such scenarios we can boost of the decision quality, adequacy and the value added in the decision made and vice versa.

References:

- Alonso S., Herrera V.E., Chiclana F., Herrera F. (2010):** A web based consensus support system for group decision making problems and incomplete preferences.
- Ashwin (2010):** Posted in *Complex Adaptive Systems, Evolutionary Economics, Financial Crisis, Rationality, Resilience* «Amar Bhide on “Robotic Finance”: An Adaptive Explanation Uncertainty and the Cyclical vs. Structural Unemployment Debate».
- Efriam T., Jay.E A., Ting-Pen L. (2005):** Decision Support Systems and Intelligent Systems, 7th edition.
- Felix C. B., Rudolf K.L., Andreas M. S. S.-hardt (2007):** Group decision making under conditions of distributed knowledge: the information asymmetries model; *Academy of Management Review* 2007, Vol. 32, No. 2, 459–479.
- Gwen M. W., Hollingshead A. B. & Isabel C. Botero (2004):** From Cooperative to Motivated Information Sharing in Groups: Moving Beyond the Hidden Profile Paradigm; *Communication Monographs* Vol. 71, No. 3, September 2004, pp. 286–310.
- Herrera F., Herrera E., Verdegay J.L. (1994):** A model of consensus in group decision making under linguistic assessment. Source: citeseerx.ist.psu.edu/viewdoc/
- Lightle (2009):** Information Exchange Group Decision Making hidden Profile Problem Reconsidered-2009-HP_Manuscript_MS.
- Perez I.J., Cabrerizo F.J. and Herrera V.E. (2010):** A Mobile Decision Support System for Dynamic Group Decision Making Problems.
- Peter De Bruyn (2011);** Towards Designing Enterprises for evolvability Based On Fundamental Engineering Concepts
- Tim Barnett (2011),** Reference for Business » Encyclopedia of Business, 2nd ed. »Gr-Int » Group Decision Making.
- Whitacre:** <http://www.biomedcentral.com/content/pdf/1742-4682-7-6.pdf> (accessed 20/04/2012)
- The Evolution of Enterprise Software and IT;**
Source: www.outsystems.com/offer/back-of-the-napkin/explaining-it.
- Cambridge Advanced learner’s dictionary 7th edition (2007)**
Source: www.cambridge.org