

# UNCERTAINTY AND MANAGEMENT ACCOUNTING: OPPORTUNITY, PROFIT OPPORTUNITY AND PROFIT

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## **Abstract**

This paper considers the concept of profit in the management cycle, from uncertainty through probability of profit to realization of profit, and reexamines the meanings of profit and risk management in management accounting. As the business management environment becomes more changeable, complicated, and difficult to predict, top leaders in business organizations must more accurately forecast opportunities and risks. Accounting profit tends to be far removed from real-world opportunity. Thus, management accounting that relies on accounting profit can become irrelevant to real business management. This paper reviews the literature on the relationship between uncertainty and profit management with the goal of clarifying the meaning of profit opportunity, which cannot exist without opportunity forecasting and the objective understanding and control of the organizational structure. At the same time, the paper focuses on the importance of continuously paying attention to uncertainty in the business management cycle and the ability of people to perceive risk. The management cycle from opportunity through profit opportunity to realization of profit is presented as a circular model with feed-forward and feedback controls.

***Keywords:** opportunity, profit opportunity, profit management, uncertainty, organizational structure*

## **Introduction**

Management accounting is generally defined as accounting information, such as profit and cost, that is useful for management planning and control. In other words, management accounting constitutes the methods and knowledge of accounting that serve business management. However, in the present period of high uncertainty, is profit information useful for future-oriented business management? Can an enterprise, relying on profit information from past performance, plan for and control its business in an unforeseeable future? If this is not the case, we must consider information on profit opportunity and

risk in the present that may lead to the actualization of profit or loss in the future (Kumarasinghe and Willett, 2010; Nishimura, 2006). Furthermore, the methods for measuring and controlling profit opportunity and risk in management accounting must be considered and developed. In an examination of the literature, past research has not clarified the meaning of accounting information and the concept of profit, which are closely related to business management. Some view accounting information as financial value, while others view it as having more general value beyond financial purposes (i.e., the information on the amount of resources and economical value). It is also debatable whether profit in today's management accounting means accounting profit or opportunity (i.e. identifying the best of many alternatives) (Nishimura, 2003).

We should, therefore, inquire into the relationship between uncertainty and business management and reconsider the concept of profit in management accounting in relation to uncertainty, since management accounting is carried out through forecasting and controlling uncertain economic activities and connecting this information within the existing organizational structure. For this purpose, this paper will first examine how management theories have dealt with uncertainty and, secondly, examine what effect uncertainty has on the concept of profit. Thirdly, it will examine a theoretical framework for opportunity, profit opportunity, and profit in reference to real-world business practices, as some insight can be gained from the recent bankruptcies of large companies that have resulted from uncertainty and their countermeasures.

## **Uncertainty and Controllability in Business Management**

Until now, uncertainty has been debated in business management from the viewpoint of controllability. According to economists, balancing production and consumption was originally too uncertain and unforeseeable to be resolved by human hands alone. Marx (1867; reprinted 1965) stated that consistency in this area was as 'the leap taken by value from the body of the commodity into the body of the gold' (*Salto mortale der Ware*).<sup>1</sup> Smith (1877, reprinted 1937) pointed out that an individual who intended only his own gain through production of the greatest value also was led by an 'invisible hand'. No manufacturer can forecast changes in markets and business environments with complete certainty, which ultimately influence the sale of the products manufactured. A manufacturer must rely solely on the confidence in his or her own calculations of the probability of profit. Putting too much faith in one's probabilities is precarious and pointless if technology and markets change suddenly and dramatically and become increasingly complicated. Although Smith dutifully acknowledged the difficulty of maintaining balance between

production and consumption and entrusted its settlement to the ‘invisible hand’ (i.e. to the market itself), management scholars have long believed that management can maintain the balance in production and demand by using management knowledge, models, and information systems. Recently, some researchers have started to incorporate *unforeseeable* uncertainty into their research, although they also believe that it can be controlled through such a method as trial and error or selection-ism (Sommer, et.al, 2004; 2009; see Table 1).

However, in the last decade, several large American manufacturing companies and banks have collapsed. In Japan, the 2011 earthquake, tsunami, and nuclear accident seriously damaged production lines, which have negatively impacted some large manufacturing companies. These events are truly unforeseeable and are those from which recovery is very difficult. In order to specifically define the relationship between uncertainty and profit, we should reexamine the management decision-making process so that uncertainty can be transformed into a certain condition, as has been stressed under the banner of the ‘managerial revolution’ and ‘managerial capitalism’ (Chandler, 1977, p.11). Further, the paper considers profit management under uncertainty, which should be the focus of the study of management accounting.

Table 1: Uncertainty and Management

Authors	Background and causes of uncertainty	Attitudes toward uncertainty	Main player
Smith, Adam	Dissociation of production and market arose from the division of labor and competition	<i>Invisible hand</i> guides market and price	Middleman
Knight, Frank H (1921)	Uneven distribution and imbalance of knowledge related to the changes of markets and technologies	Management organization act as <i>a quantitative system of knowledge</i> ; responsible management	Entrepreneur
Chandler, Alfred Jr. (1977)	Dissociation between markets and production arose from large scale industry (large scale fixed facilities; large scale fixed costs)	<i>Visible hand</i> controls markets through vertical integration of management and concentrated organization	Hierarchy of management; managerial revolution; managerial capitalism
Langlois, Richard N (2003)	Complexity of market net-works originated by the dissolution of value chain and the modular production system	<i>Vanishing hand</i> : reentrance of market on the stage; vertical non-integrated system of management	Decentralized organization and units; market
Sommer, Svenja C and Loch, Christoph H (2004~9)	Dynamic environments: unforeseeable uncertainty and high complexity	<i>Unknown unknowns</i>	Selection-ism and trial and error

We surveyed the views of management researchers who referred to the dissociation between production and market and proposed some countermeasures to control uncertainty. Table 1 shows how various management theories have grappled with uncertainty, such as Smith positing the existence of the ‘invisible hand’.

Interestingly, in strong contrast to Smith, Knight (1921, reprinted 2005), Chandler (1977), and Langlois (2003) share a common viewpoint in that they trust the power of humans (or management organization and methods of management) to control uncertainty. However, the logical process of each is different from the others; Knight focuses on the *entrepreneur*; Chandler on the *vertical hierarchy of management*; and Langlois on *modular production systems and vertical non-integrated organizations*. Langlois, whose ideas on the vanishing hand follow directly from the invisible hand of Smith and the visible hand of Chandler, does not emphasize the deepened uncertainty and unmanageable chaos that frustrate business managers. He focuses on the contemporary, new characteristics of modular manufacturing systems and the functions of vertical non-integrated organizations in relation to the controllability of uncertainty.

Although they surely considered uncertainty an important and troublesome problem, Knight, Chandler, and Langlois all have strong confidence in the ability of management to control uncertainty through information, organizational system, and models. Certainly their ideas, which were socially complemented by Berle & Means’s (1932) ideas on the division of ownership and concentrated management and the independence of manager control in private corporations and Burnahm’s (1941) ‘Managerial Revolution’, have dominated the field of management. Thus, management accounting, in keeping step with these ideas, has also moved forward under the prevailing belief that uncertainty can be controlled. The debate on the relationship between uncertainty and profit, which will be examined in this paper, is also a result of this field of thought, since according to these scholars, uncertainty brings forth profit, and controllability over uncertainty allows for the management of profit. Management and accounting have tried to find opportunity and profit in the uncertain world and to plan and control profit opportunity under the strong belief that uncertainty can be controlled. The next section examines the relationship between uncertainty and profit in detail under Knight’s theory.

## **Knight’s Theory on Certainty and Profit**

### *Uncertainty and Knowledge*

According to Knight, perfect knowledge gives rise to profits, in contrast to imperfect knowledge, which does not. Knight states that “For profit arises

from the fact that entrepreneurs contract for productive services in advance at fixed rates and realize upon their use by the sale of the product in the market after it is made”, even though profit is indirectly connected with changes in economic conditions (Knight, p.197-8). Entrepreneurs who rely only on known rules and experiences cannot forecast future changes in environment and the rise of severe competition and fulfill contracts made in advance. Therefore, quantitative knowledge that leads to the accurate knowledge of the future plays an important role in determining “the possibility of every possible outcome” (Knight, p.198-9). Profit is deeply related to future knowledge, judgment, vision, foresight, probability, and reaction before the materialization of a situation. Accurate, quantitative knowledge leads to “the reduction of uncertainty” (Knight, p.293) and the magnification of certainty.

On the basis of the thoughts above, the owners of a joint-stock company, where ownership is diffused and control concentrated, come together to elect directors who exercise control over general policies and choose the officials to carry out its business. Stockholders must depend on the knowledge of others to obtain accurate information on the situation in the business and its problems, and rely on others to determine the means for affecting change (Knight, p.292). Executives chosen by directors generally oversee business policy and select subordinates who make most of the actual decisions involved in controlling the company. According to Knight, the “fundamental principle underlying organized activity is therefore the reduction of the uncertainty in individual judgments and decisions by grouping the decisions of a particular individual and estimating the proportion of successes and failures, or the average quality of his judgments as a group” (Knight, p.293). As a result, officials who are free from responsibility can be distinguished from stockholders who must bear the risk of error in decision making. While the person who makes decisions and deals with “uncertainty as a matter of routine” or who seeks to eliminate uncertainty (no risk taking) receives a fixed salary, the stockholders, who do not make decisions or exercise control, are the ones who are exposed to risks and receive any profit earned. However, executives who are chosen by stockholders to oversee business policy and select subordinates also receive profits, since they use quantitative knowledge of subordinates to produce profits by controlling future changes in economic conditions. We must point out Knight’s ‘revolutionary’ conversion of function from manager to *entrepreneur*. According to Knight (1921), this conversion occurs when a manager exercises judgment involving “liability to error” and gets the other members of the group to submit to his direction on the condition that he takes responsibility for the disappointing results of his choices. At this point, “the nature of the function is revolutionized: the manager becomes an entrepreneur.” As a result of his responsible decision-making, the entrepreneur produces “profit” and receives a part of profit.

Knight elaborates on the role of the executive by stating that the “fundamental fact of organized activity is the tendency to transform the uncertainties of human opinion and action into measurable probabilities by forming an approximate evaluation of the judgment and capacity of the man. The ability to judge men in relation to the problems they are to deal with, and the power to ‘inspire’ them to efficiency in judging other men and things, are the essential characteristics of the executive” (Knight, p.311). We find “a complicated division or diffusion of entrepreneurship, distributed in the typical modern business organization by a hierarchy of security issues carrying every conceivable gradation and combination of rights to control and to freedom from uncertainty as to income and vested capital” (Knight, p.300).

### ***Entrepreneur’s Connection with Profit or Risk***

According to Knight, in contrast to determining the value of the contribution of workers and equipment to physical production, “the facts upon which the working-out of the organizations depend can no longer be objectively determined with accuracy by experiment; all the data in the case must be *estimated*, subject to a larger or smaller margin of error, and this fact causes differences more fundamental than the resemblances in the two situations. The function of making these estimates and of ‘guaranteeing’ their value to the other participating members of the group falls to ***the responsible entrepreneur*** in each establishment, producing a new type of activity and a new type of income entirely unknown in a society where uncertainty is absent” (Knight, p.276). An entrepreneur of an organization must always face uncertainty and must estimate and guarantee the value produced in uncertain conditions, subject to some margin of error. A person cannot enjoy profits without taking risks. In the modern corporation, the managerial functions of dealing with uncertainty fall to the responsible entrepreneur, while routine controllers and persons working with some higher degree of certainty have no such responsibility.

Regarding entrepreneurship, one may say from the above that it has the dual aspect of organization activity: ownership which is related to responsible decision-making of business strategy and risk-taking, and management control related to the strategy. However, as the division between ownership and management and of management function becomes evident, apart from the ordinary management control under certainty, an entrepreneur in a company takes a definite form as an executive who promotes a new enterprise or creates new business value and is responsible for its outcome and the inherent risks. Because uncertainty has such a strong influence on certain functions in a business organization, the division of organizational activity becomes important. Knight points out that “in the first place, occupations differ in respect to the kind and amount of

knowledge and judgment required for their successful direction as well as in the kind of abilities and tastes adapted to the routine operations. Productive groups or establishments now compete for managerial capacity as well as skill, and a considerable rearrangement of personnel is the natural result. The final adjustment will place each producer in the place where his particular combination of the two kinds of attributes seems to be most effective” (Knight, p.269). After all, “the organization of industry depends on the fundamental fact that the intelligence of one person can be made to direct in a general way the routine manual and mental operations of others”. Although uncertainty is primarily controlled by selecting personnel and specializing in one of the following four functions: knowledge and judgment, foresight, specialization, and risk-taking, ultimately their functions are personalized in *entrepreneurs* who responsibly direct economic activity and are rewarded with a part of ‘profit’ and persons who furnish them with productive services in the wage system (Knight, p.270).

Regarding profit, Knight states that the only “risk” that leads to profit is a unique uncertainty resulting from an exercise of ultimate responsibility. “Profit arises out of the inherent, absolute unpredictability of things, out of the sheer brute fact that the results of human activity cannot be anticipated and then only in so far as even a probability calculation in regard to them is impossible and meaningless. The receipt of profit in a particular case may be argued to be the result of superior judgment” (Knight, p.310-11). According to him, management organizations consist of risk-taking entrepreneurs who tackle uncertainty and hire managers who do routine control services under comparative certainty, with the goal of creating a system that produces superior judgments on profit.

Knight gives us some important points for our argument as follows: profits are closely combined with *uncertainty*; profits are realized as a result of increased *probability* through perfect knowledge, and *entrepreneurs* play a critical part in systematically generating quantitative knowledge and accurately grasping future changes in economic conditions. These issues involving the concept of profit will be examined later.

Langlois (2003) examines how merchants protected against uncertainty and sought profit opportunities in the period before the American Civil War, as well as how management systems are handled within a corporate structure adapted to “the needs of new technology and of new profit opportunities” (Langlois, p.357 and p.353). He takes profit opportunity for granted when uncertainty and protection against it are called into question. Chandler (1977, p.449) also points out that forecasted information and the variance in the actual results increase the “possibilities for rational choices between alternative investments and alternative methods of financing them”.

These arguments about the relationship between uncertainty and profit and opportunity opened a new path for executives' strategic decision-making and organizational structures, in which management and production structures carry out decisions with the goal of transforming strong uncertainty into enhanced certainty. At the same time, opportunity and profit management have been systematically discussed in the literature in connection with decision-making problems, which are the foundation of the management accounting structure pertaining to uncertainty.

## **Uncertainty and Decision-making**

### *The Works of Simon and Anthony, and Non-programmed Decision*

The work of Simon (1960, p.5-6) elucidated decision-making problems and deepened executives' desire to mitigate uncertainty. He divides decisions into repetitive and programmed decisions and non-programmed decisions. While the programmed decisions need not be treated *de novo* each time they occur since there is a defined procedure for handling them, the non-programmed decisions cannot adopt "cut and dried method for handling problems' since they are novel, unstructured, and consequential". As for non-programmed decisions 'the problem hasn't arisen before, or their precise nature and structure are elusive or complex" (Simon, p.6). The techniques for non-programmed decision-making shift from the three traditional methods of (1) judgment, institution, and creativity, (2) rules of thumb, and (3) selection and training of executives, to the adoption of the more modern solutions such as the heuristic problem-solving techniques applied to training human-decision makers and the construction of heuristic computer programs (Simon, p.9). Simon focuses on increased heuristic problem-solving processes through the human-initiated usage of computers. Because human thinking is governed by programs in which myriads of simple information processes are organized, "programs can be written to describe human symbol manipulation, and these programs can be used to induce a computer to simulate the human process" (Simon, p.26). He argues that computer simulation has the important effects of explaining heuristic processes used by people "in their non-programmed problem-solving and decision-making activity" (Simon, p.32). He also holds the belief that uncertainty can be controlled by heuristic problem-solving processes supported by computers.<sup>2</sup>

Simon has exerted a strong influence on business management and management accounting. To further understand decision-making problem in profit management, we must examine two representative thoughts that could be subject to Simon's influence in the mid-1960s. First is Anthony (1965), who discussed the framework of strategic planning, management control, and operational control. In parallel

with Simon, he divides planning into strategic planning that seeks to optimize, not sub-optimize, the effectiveness of the whole organization in unexpected scenarios (Anthony, p.35) and planning for the control of regular processes. In strategic planning, to which we pay particular interest, “problems, opportunities, and bright ideas do not arise according to some time timetable” (Anthony, p.38). Strategic planning combines with “what happens over a considerable period in the future” (Anthony, p.53) and long-term consequences (Anthony, p.68) to create such complexity that one is unable to think of “a complete specification of alternatives courses of action” (Anthony, p.57).

A person making strategic decisions who has a choice among several alternatives may view strategic planning in relation to opportunity as follows: “Strategic planning should be done whenever an opportunity is foreseen or a problem arises, and it should be done according to whatever type of analysis is most suitable for the proposal or problem” (Anthony, p.66). Concretely “strategic decision is made effective not only by its own fitness to evolving circumstance but by the commitment of individuals and groups inspired always by their own needs and sometimes by uniquely appropriate leadership” (Anthony, p.62).

A person can have confidence in transforming uncertainty into certain conditions by using effective strategic planning, although at the same time, he or she must perceive the unknowable uncertainties of the future.<sup>3</sup> Under such conditions, after strategic planning decisions have been made, management control and operational control can be carried out efficiently and effectively. In such cases, we should pay attention to the idea of connecting strategic planning with opportunity. In the strategic planning process, opportunity under uncertainty takes the shape of a choice among various alternatives, each with a given probability. According to Anthony, “strategic planning should be done whenever opportunity is foreseen or a problem arises”. This leads to new issues: what is opportunity? How are opportunities and uncertainties transformed into alternatives or items with a certain probability? These questions may be the most critical issue in contemporary management accounting.

### *ASOBAT's Thought and Decision-making Process*

*A Statement of Basic Accounting Theory (ASOBAT)* from the American Accounting Association (AAA) (1966) follows the same path as Anthony, based on Simon, and gives management accounting a concrete structure for decision-making involving non-programmed activity. *ASOBAT* depicts the four dimensions of management in a matrix of un-programmed (equivalent to non-programmed) and programmed activities and planning and control functions: top-level planning (un-programmed planning); control of factory operations (programmed control);

the implementation function (planning programmed activities); and the control of un-programmed activities (AAA, p.44). Of the four following objectives of accounting, (1) making decisions concerning the use of limited resources, including the identification of crucial decision areas, and determination of objectives and goals, (2) effectively directing and controlling an organization's human and material resources, (3) maintaining and reporting on the custodianship of resources and (4) facilitating social functions and controls. These dimensions are particularly related to the first two objectives (AAA, p.4). In *ASOBAT*, un-programmed planning is thought of as a decision-making activity involving the selection of alternatives, which is closely connected with accounting information received beyond both the conventional model and historically valued transaction data. Relevant information is derived from cost-behavior analysis, use of time-adjusted cash flow projections, the reporting of projected alternatives using ranges and probability distributions, the development and manipulation of inventory, and other management models and simulation techniques (AAA, p.38).

Moreover, *ASOBAT* discusses the decision-making process at length and puts forth four key steps: (1) recognizing and defining the problem, (2) searching for alternative solutions, (3) evaluating the alternative solutions, and (4) selecting an alternative based on the results of evaluation (AAA, p.45). An important problem about controlling un-programmed activities is identified as follows: "For un-programmed activities control is more difficult. Here, the methods are often unspecified, or unknown in advance, and it is difficult, if not impossible, to assess intermediate methods or results on the way toward achievement of the specified plan. The problem is exemplified in the control of research and development where there are few guidelines for methodology and the nature of the goal is often relatively unknown. Indeed, management is in the position of having to control such an activity without knowing exactly what the activity should be doing" (AAA, p.46). For decision making in such situations, data besides traditional models and economic data are used in addition to traditional accounting information to select the best alternative since a decision cannot be made without the reduction of uncertainty and the enhancement of probability (AAA, p.60). Knight, Simon, and Anthony share the strong conviction that by using information, models, and simulation, management can overcome uncertainty that cannot be known and specified.

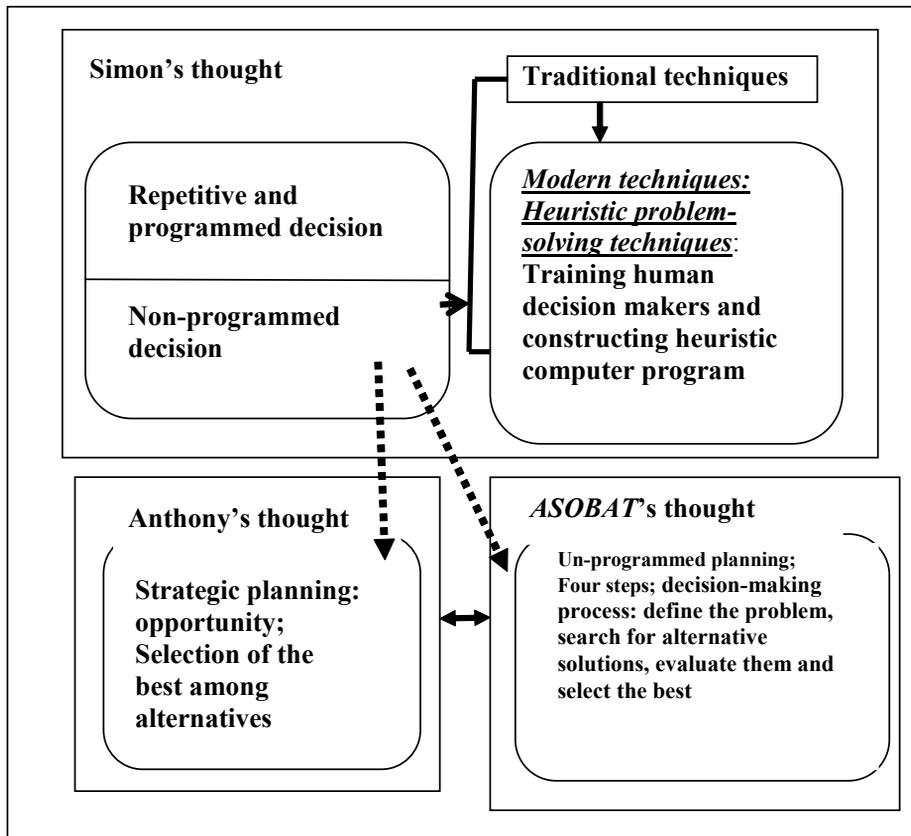
### ***Demski's Model and Profit Management***

We recognize that Simon, Anthony, and *ASOBAT* share a common stance on uncertainty in management, namely that uncertainty can be controlled through stable and systemized decision-making and expanded information and models (See Figure 2). Along this stream of thought, we need to examine the model

that Demski (1967; 1969) designed and developed to forecast future profit and control the decision-making process using the concept of opportunity cost. This model is the first valuable method for accounting researchers to examine an uncertain world. Demiski (1967) proposed an *ex post* system related to profit-variance analysis, where the forecast variance of profit is calculated as a result of variance between *ex ante* profit and *ex post* profit, and opportunity cost variance is recognized as the variance between *ex post* profit that should be realized under proper execution and control and the actual profit. Of course, the same business conditions as actual profit was calculated must be assumed when *ex post* profit is calculated. Demski clarifies the relativity and uncertainty of estimated profit and the relative authenticity or objectivity of *ex post* profit. As a result, opportunity cost is calculated on the basis of actual profit in comparison with *ex post* profit. The concept of opportunity cost indicates how much actual planning and control performance varied from the authenticated and *accurate* profit under a changeable environment, as calculated using a linear programming method. Although his model contributed to the progress of management accounting science, he unfortunately analyzed opportunity cost from the angle of actual profit, or reality, since *ex post* profit is calculated after the measurement of actual profit, assuming the same conditions as in actuality. Thus, because he insisted on feedback control, the model represents *post-opportunity cost*. Instead, the variance of forecast profit would show opportunity in uncertainty (Nishimura, 2003).

Under the wide fluctuation and complexity of the contemporary global economy, actual management should make decisions on *ex ante* and *ex post* profits in advance, before the actual profit is measured. It is problematic how management forecasts opportunity and profit opportunity in advance, where profit is based on opportunity, before the materialization of actual profit. Although Demski proposed a model that uses opportunity cost to control the process of decision-making and performance evaluation using feedback control, top managers might search for better opportunities in actual business management. At this stage, the relationship between profit opportunity under weaker certainty and another profit opportunity under stronger certainty and the opportunity cost and risk must also be forecasted and controlled in advance using a feed-forward control. This variance represents the distance of profit opportunity from uncertainty, or *prior-opportunity cost*, while the variance between optimum profit opportunity and actual profit shows *post-opportunity cost*. Such a feed-forward system displays the relationship between optimum profit opportunity and risks and facilitates risk management. In addition, when profit opportunity is specified in the form of two different types of profits: for example, market-competitive profit and long-term strategic profit (growth-durable profit), their variance also shows the way towards optimum profit opportunity in an accounting-measurable form.

Figure1: Uncertainty and Decision-making



The target calculated as its result plays a role in implementing feed-forward profit controls, such as finding new preventive and proactive methods to reduce variance beforehand and changing existing working behaviors and opinions. When the estimated optimum profit or optimum profit opportunity is compared with actual profit, the variance is calculated as true opportunity cost.

The idea of cost design, invented by Japanese car companies, has taken the concept of feed-forward control over cost management and led to the development of cost-variance analysis. Cost-variance analysis uses the comparison of two *ex ante* costs (long-term target and short-term competitive costs) and their variance to forecast and control the optimum cost within certain bounds of probability. Then, the variance between the optimum cost (target cost) and actual cost shows lost opportunities for cost reduction. Cost-design variance analysis is much closer to the idea of controlling opportunity, profit opportunity, and profit from an feed-forward accounting angle than the Demski

model. However, in Japanese corporate management, target cost as *ex ante* costs may also be estimated under stronger certainty.

## **Some Cases of Lost Profit Opportunity in Large Business**

Unfortunately, we cannot yet clarify what relationship exists between uncertainty and opportunity, or between opportunity and profit, although the aforementioned authors used methods such as models, decision-making process, computer-based heuristic problem-solving processes, and extended information to transform uncertainty into profit under real conditions. As they point out, because uncertainty is elusive and intangible, opportunity related to uncertainty is also vague and difficult to grasp. However, management researchers have tried to directly forecast an opportunity as a profit opportunity by means of selecting alternatives. To repeat, opportunity does not always exist under probability. Opportunity is uncertain and is not completely foreseeable and each opportunity only provides decision makers one chance to act on what is expected to be realized in the future.

Is it possible to objectively control uncertainty? Until now, management researchers have dealt with unforeseeable uncertainty as controllable, but recently some have started to discuss *unforeseeable* uncertainty itself, as shown in Table 1. Actually, managers have selected opportunities suitable to their purpose or desire, which has a certain subjective or objective probability. Therefore, at the same time, risks also take shape and those who take advantage of an opportunity should be responsible for the risk. Risk arises based on the probability of an opportunity and no-one would take risks without the expectation of having a good chance to succeed. In this paper, profit opportunity refers to an opportunity with some subjective or objective probability of profit. Although profit opportunity is more specifically forecasted as budgetary or estimated profit in accounting, when profit can be estimated with higher probability, the concept of profit opportunity is completely different from that of budgetary or estimated profit. This difference is because profit opportunity is still uncertain and is only estimated with weaker probability than budgetary profit, which is estimated under higher probability. Profit opportunity is selected from many possible opportunities on the basis of business goals, in connection with the organizational structure. By looking at lost profit opportunities in actual business experiences that have occurred recently, we can contribute greatly to the study of this problem.

We now live in the time when we encounter things that nobody has previously experienced. As Ingrassia describes in his book, *Crash Course* (2011), older generations could not even image the bankruptcy of General Motors (GM), “America’s banks going broke”, or Mr. Barack Obama being elected president of

the United States. Did GM have no opportunity at all? It may not matter whether there was opportunity or not, but whether or not executives could transform opportunities into profit opportunity.

According to Ingrassia, Honda's sales of small subcompacts increased from 20,000 in 1972 to 220,000 in 1977 by exporting from Japan to America, and at that time Ford was interested in buying four cylinder engines from Honda to use in Ford small cars. However, Henry Ford II declared: "No car with my name on the hood is going to have a Jap engine inside". After that, the Big Three likely felt dismayed by the fact that Honda's Ohio motorcycle plants and car factory started to topple the Big Three and UAW dominance when Honda brought successful management and motivation to American workers (Ingrassia, p.64). The power to turn opportunity into profit opportunity requires looking squarely at the objective facts of a changeable business environment and the existing organizational structure, such as all the employees' morale and motive, whereas the dominant factor in turning opportunity into risk or missed opportunity is arrogance and sycophancy. As a result of having expended its energies on financial policy and diversifying its businesses early in the 20<sup>th</sup> century on what the company viewed as golden opportunities for profit, GM had "far too many U.S. brands, too many dealers, too many factories, and too many workers, all of which added huge layers of unnecessary costs". Moreover, GM CEO Rick Wagoner rejected the recommendations of an internal "deep dive" analysis report to cut the excess production capacity (Ingrassia, p.155). In the end, the excess production capacity and shortage of credit that resulted from "high-paid and low skilled jobs" and "high-rebate to dealers" which ultimately led to bankruptcy.

We can learn about lost profit opportunity from GM management, particularly from its bankruptcy, just as we learned about advanced and standard management models in a university business administration course. The bankruptcy was not caused by the management model or information system but by management people, including the CEO, managers, dealers, and UAW workers. Ingrassia (p.273, 277) interestingly states: "General Motors had virtually invented the modern corporation with professional managers, as opposed to family founders, presiding over decentralized operations that were governed by central financial control. It had pioneered modern marketing, public relations, and the hierarchy of brands that made automobiles vehicles for social as well as physical mobility. It had set standards for everything from style and design to corporate healthcare plans".

We had another important lesson. "Another broad lesson applicable far beyond the car business was that judgment trumps structure almost every time. On

paper, pre-bankruptcy GM had the right structure for corporate oversight. The board of directors consisted of almost entirely of outsiders, not members of management, who were led by a 'lead independent directors.' That was the good news. That bad news was that CEO was Rick Wagoner and lead director was George Fisher, who piled mistake upon miscalculation upon misjudgment while the rest of the board simply watched" (Ingrassia, p. 277). "Complacency, arrogance, and hubris" bred by great successes that extended over a long time held all the persons concerned in GM from looking directly and objectively at real facts, and made them miss a chance to transform opportunity into profit opportunity and make a timely transformation of the company. Even excellent management system and governance structure are not given full play by arrogant leadership and dispirited employees. At the same time, we should not forget that the active ability of people and organizational power can change risks into profit opportunities.

Arrogance and hubris are by no means special characteristics of U.S. automobile companies. Toyota in Japan, the competitive counterpart to GM, whose management systems such as the JIT and Kanban systems are world famous, was also bogged down by arrogance and hubris, this despite the fact that Nissan had also already been tormented by its bureaucratic organization in 1980s. Toyota grew the sales of its cars from 1.6 million in 2000 to 2.6 in 2007 in the United States. It continued to invest in the construction of new plants in the United States and Canada on a large scale, setting its sight on the goal of being "the Greatest in the World". The expansion included the San Antonio Plant for manufacturing full-sized pickup trucks in 2005, a new plant for manufacturing sport cars and RAV4s in Ontario, Canada, and a construction program for an SUV plant at the State of Mississippi in the United States in 2008, despite the fact that the company was confronted with serious quality problems. Specifically, 2.38 million cars were recalled for anticipatable safety defects in 2005. The new president of Toyota Corporation, Akio Toyoda, told a news conference in Beijing that the quality problem was mainly a result of the company giving too much priority given to growing market share and earnings (Wall Street Journal, Japanese version, 2 March 2010). He criticized previous top auto managers in the corporation because no other employees in the company were empowered to make decisions except them. Collins (2009) points out as follows: "We will encounter multiple forms of hubris in our journey through the stages of decline. We will see hubris in undisciplined leaps into areas where a company cannot become the best. We will see hubris in a company's pursuit of growth beyond what it can deliver with excellence. We will see hubris in bold, risky decisions that fly in the face of conflicting or negative evidence. We will see hubris in denying even the possibility that the enterprise could be at risk, imperiled by external threats or internal erosion"

(Collins, p. 30). Because of the arrogance and sycophancy of CEOs who lost sight of the objective situation of the business environment and self-interested and unmotivated organizational members and employees, GM and Toyota could not objectively discern the changes in the global business environments and make changes to their organizational structure. In particular, the motivation and morale of employees could not be improved and the best profit opportunity in the companies could not be created, since the wrong prospective opportunity was pursued and the situation was made more disadvantageous as a result of problematic organizational structures. It led to hubristic and unscientific management behavior, believing in the absolute controllability of uncertainty notwithstanding its impossibility. On the contrary, to think over the ceaseless existence of uncertainty and its relative controllability makes us take a modest and prudent behavior.

### **Opportunity, Profit Opportunity and Profit**

The management cycle, from opportunity to profit opportunity to profit (or to lost profit opportunity and losses, as the case may be), mirrors the path from uncertainty through probability to reality. Accounting profit is not real profit, but a calculated profit that symbolizes reality. Profit materializes in markets only when planned products and services that are produced on the expectation of profit opportunity coinciding with consumer demands and needs. Profit opportunity and budget profit are forecast under uncertainty before production actually occurs in markets. Even an orderly organizational structure administrated by excellent stratified management cannot avoid uncertainty and consumer behaviors. At the same time, even the most excellent top management cannot transform profit opportunity into profits by themselves. In comparison with profit, profit opportunity is closely related to understanding the true condition of an organization and the ability and willingness of its peoples within the production and management structures, as well as grasping the changing conditions of markets and competition (information on price, supply and demand, consumer needs, and other changing factors), and combining this organizational and market knowledge under a particular probability. However, all leadership and members of an organization should continue to be aware of uncertainty, since the required steps and activities to successfully pursue a profit opportunity remain uncertain before its completion. Therefore, profit opportunities require forecasting the connection of organizational structure (production and management structure) with the changing business environment as objectively as possible, whereas profit results from effectively and efficiently acting on profit opportunities to the best of the organization's ability within its structure. Presently, this management cycle is always estimated and carried out in businesses. Apart from whether uncertainty is controllable or not, we should, at present, examine the relationship among

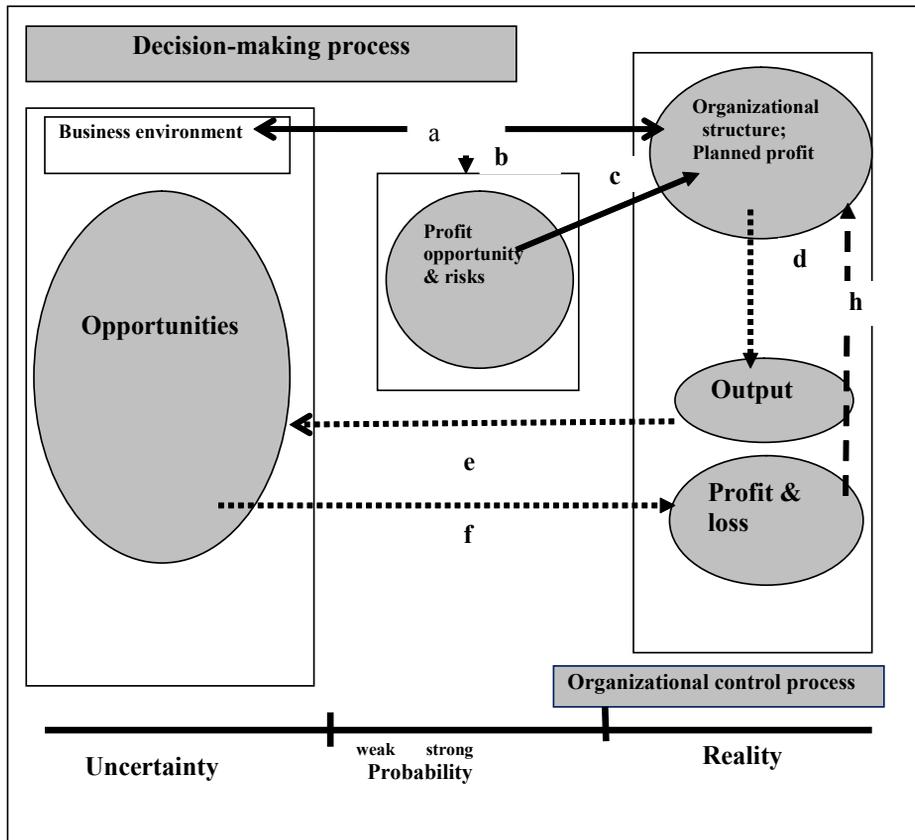
the three stages (opportunity, profit opportunity, and profit) in order to clarify strategic and risk management.

Top managers who are responsible for linking opportunities with the business organizational structure and for the decision-making on profit opportunities should directly look at the real changes in organizational structures and business environments and analyze the possibility of successfully making this combination. This process is concerned not only with the abilities of individuals such as judgment, knowledge, and analysis ability and charisma, but also with organizational governance, including the selection of management, organizational decision making, and motivation of all members. In this case feed-forward control plays the most important role in securing profit opportunity, since top leaders must look forward and adopt preventive and proactive controls for understanding profit opportunity (Nishimura, 2003; 2005; see a, b, and c in Figure 2).<sup>4</sup>

Regular management and production organizations that are directed by top managers should also carry out their assigned missions under relative certainty after a profit opportunity is identified. Their shared tasks are performed, controlled and evaluated according to the plan as developed. At the same time, after performance evaluations, feedback control gives a full perspective on the actualization of expected plan in cases where the planned result was not satisfied. This feedback control is possible when organizations are relatively certain and stable. However, as long as uncertainty affects the whole management cycle until the point when products are actually sold, managerial and production structures (i.e., organizational structure) are also not completely free from uncertainty. Therefore, the loops of feed-forward and feedback controls are repeated under uncertainty. Physical and mental conditions in an organization that keep top leaders from making good judgments and decisions and a stagnant organizational culture always gives rise to uncertainty throughout the whole business. Therefore, the ability of people in an organization to sense and understand risk, as well as well-structured management and production structures, is critical for the transformation of profit opportunity into profit and for good risk management. Thus, business culture gains momentum to make the whole organization move forward and function smoothly (Nishimura, 2003; 2005; see d, e, and f in Figure 2)

To summarize, profit opportunity exists between the initial, uncertain opportunity and the actual organizational structure, but cannot be accurately forecasted without objectively observing changes in the business environment, and having awareness of the opportunities under uncertainty and the actual organizational structure. Successfully linking knowledge of the opportunities

Figure2: Opportunity, Profit Opportunity and Profit



\*The process from *a* through *b* to *c* represents feed-forward control and the processes from *d* through *e* and *f* to *h* represent feedback control. The control loop from *a* to *h* shows a business control cycle: the combined loop of feed-forward and feedback controls.

with awareness of the organizational structure leads to good profit opportunities. However, wrong decisions and poor awareness leads to terrible risks, or worse, to business crises.

## Conclusion

As examined above, management and accounting scholars have researched and developed significant and ingenious tools and techniques that have contributed to improving the effectiveness and efficiency of management. However, in a strongly uncertain global society, reexamining the fundamental framework of business management and accounting in reference to uncertainty seems to be of utmost importance. If the basic logic of management theory is weak, the whole structure is like a house of cards, even though each element and component of

the system is elaborate and perfect. We should more scientifically study the basic logic of management accounting through following the path of the scientific forerunners of management. Although management and accounting scholars have opened many ways to transform uncertainty into certain conditions and invented systemized and specific management tools, in the present unstable economic society we must realize that business management cannot always eliminate the threats of uncertainty and must always be prepared mentally and physically with preventive and proactive measures. At present, the modest behavior of top management and the goodwill and morale of organization members becomes increasingly important. Even if enterprise governance and internal control are thorough and complete, only human beings, as real persons, *can sense changes that are just about to happen* and work within and manage the system since management tools are used *objectively and actively*. Arrogance and lack of attention weakens this feeling and makes everyone lose sight of changes in the organization and environment and causes the many excellent management tools to be used erroneously in a non-objective manner.

The paper has discussed the theoretical framework of the management cycle from uncertainty through probability of profit to realization of profit by referencing representative literature and describing the relationship between opportunity, profit opportunity, and profit, all vital areas to which management accounting must pay attention. Viewed in this light, the management accounting of the day can be regarded as a science and the technologies that make use of the concepts on the path from opportunity through profit opportunity to profit itself can be seen as enhancing the relative stability and probability of management through feed-forward and feedback controls in an uncertain environment. This science and these technologies also lead to durable business growth in an enterprise.

## **Notes**

- <sup>1</sup> The argument on the relationship between uncertainty and its management is applied to socialist planning economies as well as capitalist market systems. Although socialist leaders had strongly believed in the controllability of uncertainty between production and consumption through a centrally planned economy, in the end, nobody could control it. The lack of control occurs since as leaders become more dictatorial, the less objectively they can forecast production capacity and consumers' demand, as well as the true morale of members of society. This process is quite similar to lost profit opportunities in a private company in capitalist market economy.
- <sup>2</sup> Simon described as follows: "There is now good reason to believe that the processes of non-programmed decision making will soon undergo as fundamental a revolution as the one which is currently transforming programmed decision making

in business organization” (Simon, p.21). We, at the same time, should give ear to Simon’s following words: ‘He (The operational research enthusiast) expects the managers to be so dazzled by the beauty of the mathematical results that he will not remember that his practical operating problem has not been handled” (Simon, p.18).

<sup>3</sup> Anthony said that “the uncertainties of the future may be so great that no one trusts the validity of assumptions incorporated in the model” (Anthony, p.60).

<sup>4</sup> See Nishimura (2003) on the concepts of feedback and feed-forward controls and Demski’s model.

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