

Evolution of Financial Information & Internal Control Systems - A Case Study of Growing Businesses in Hokkaido

Shahzadah Nayyar Jehan¹⁾

Satoshi Hatamoto²⁾

Abstract

Business evolution is bound to bring changes in the management's need for information and this change gets translated into financial and internal control systems of such businesses. The paper found evidence from growing businesses in Hokkaido that business growth brings in both qualitative as well quantitative changes in the way various financial data is assembled and reported. It was also found that as a business moves towards lateral stages in its life, management and owners are more interested in operational analytics than in the investment indicators except for a few industries with different business patterns.

1. Introduction

As businesses go through progression and business problems become more complex, the diagnostics necessary to answer and act on these problems

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- 1) Shahzadah Nayyar Jehan is Post Doctoral Research Fellow of Japan Society for Promotion of Sciences and is presently a Visiting Scholar at Otaru University of Commerce, Otaru, Japan
 - 2) Satoshi Hatamoto is Associate Professor at Graduate School of Commerce, Otaru University of Commerce, Otaru, Japan.

require an elevated level of information assimilation and managerial teamwork. Traditionally, finance departments were very often the only departments with access to accurate information about a company's financial results. However, this information was usually at a collective level and wasn't available until several days, sometimes weeks, after the end of the month.

At the same time, however, accounting, finance, tax and other financial areas continue to evolve to serve the needs of the growing enterprise. This article examines the evolution of financial diagnostics and its effect on the state of data warehousing, analysis and reporting both on the quantity as well as frequency of the data reported. As the business size and age grow, so does the role of the finance function within an organization; and the financial and accounting information generated, analyzed and reported also undergoes a transformation. This transformation is driven by the need to incorporate the increased financial data generated as well as due to the changes in its reporting role. In this way, most finance functions are becoming more efficient requiring fewer resources to manage them and closely aligning with the company's business structure. This is especially true in the area of transaction processing where improved automation of financial transactions has enabled finance staff to expand their role and spend more time supporting decision-making processes, rather than just processing and reconciling transactions.

The evolution of the accounting information system (AIS) goes hand in hand with the growth in size and scope of the business and as a result both the magnitude and frequency of the accounting information generated, analyzed and reported is affected. Although this study takes a neutral approach towards the nature of these changes occurring over the growth phase of the business in its AIS; studies are out there that suggest that growth and survival bring about positive reformation in AIS (Hutchinson

and Ray 1986). The paper is intended to look into the ways a business's accounting information and internal control systems are transformed as the business ages and its size grows.

2. The Study

The paper is based upon a study conducted through a questionnaire based survey of 184 small and medium sized companies located in Hokkaido, Japan. The companies were selected randomly from Hokkaido Firm Data Yearbook (2002) published by *Hokkaido Shinbunsha* (Hokkaido Newspaper Publishing Company). The compendium provides a comprehensive listing of companies in Hokkaido area in various industries. Out of tens of thousands of companies, a total of 1200 companies were selected based upon a minimum no of full time employees for sending the questionnaire. The minimum number of employees was 70 which was considered large enough in order for the firm to employ a minimum level of managerial and internal controls. The questionnaires were sent in August of 2004 and by the end of October, 2004, replies from over 200 companies were received through post. Out of this number 184 replies ($n = 184$) were considered eligible for inclusion in the final analysis based upon the clarity of replying. The firms were selected on the basis of a minimum level of business gauged by a minimum number of full time employees. Also, it was done in a way as to make the data representative of most of the industry types. It was necessary to have companies with enough expertise and the business age so as to be able to answer all or most of the aspects of the questionnaire (See Table 1). The questionnaire covered quite a diverse ground and was designed to collect information about the ways in which various financial information were collected and interpreted over the life of the businesses. The questionnaire focused

on three stages of the businesses covered i.e. early stage, growth stage and expansion stage. The information related what accounting information was compiled during these business stages in order to reach financial conclusions, so as to make investment and operational decisions. It particularly focused on the way internal control reporting and analysis got transformed over the life of the business.

The study was conducted on the premise that business maturity and growth must be instrumental in bringing about a quantitative as well qualitative change in the magnitude, frequency and the components of financial reporting. The belief was based on the fact that certain financial activities are abandoned over the business life and some other activities take over ; hence changing the composition of the financial data to be compiled, analyzed and reported. It was necessary to ensure that factual assessment of operating processes, decisions and results are conducted on a continual basis and only relevant data is dealt with.

3. The Data

The data collected focused mainly on the following activities:

1. The Operational Results
2. The Investment Activities
3. The Internal Control Activities

The data was collected from a varied mix of firms from a number of industries as following:

1. IT
2. Service
3. Print & Broadcast Media
4. Transport & Communications

5. Tourism & Hotel
6. Machinery Manufacturing
7. Construction
8. Vehicle & Shipbuilding
9. Food
10. Civil Engineering & Building
11. Consumer Goods wholesale & retail
12. Others

This classification is same as used by *Hokkaido Shinbunsha* (Hokkaido Newspaper Publishing Company) in its yearbook on Firm Data 2002 about the firms in Hokkaido area of Japan. The information collected ranged from basic company financial data like age of the firm, the line of business, number of full time employees, annual sales, the net assets as well as other detailed aspects of the financial recording, interpreting and reporting. All the companies were asked about their present stage of business. Out of 184 only 161 were able to identify their stage of business as either early stage ($n=3$), growth stage ($n=34$) or expansion stage ($n=124$). Remaining 23 companies were unable to be specific about the stage of business they were in, as they were unsure as to where they are or where they would be in a foreseeable time period. As large component of the sample firms were at the advanced stage of the business, it implied that they are the firms who have experienced earlier two stages of the business i.e. early stage and the growth stage. That was necessary to establish the strategic trend of the accounting and financial information designs over the period of business lives. A business that has experienced all three stages was considered more likely be better able to reflect that trend.

Table 1 : Sample Characteristics

Industry Type	No. of Companies	Average Age	Average No. of Employees	Average Annual Sales (Million¥)	Average Net Assets (Million¥)
Civil Engineering & Building	20	48.5	125	749.1	18.5
Construction	10	38.5	95	205.9	4.1
Consumer Goods wholesale & retail	8	27.9	405	2,410.9	98.1
Food	30	41.2	160	456,632.0	53,013.0
IT	9	26.1	286	551.4	59.2
Machinery Manufacturing	10	40.8	335	1,554.0	39.1
Print & Broadcast Media	9	41.4	119	654.5	14.5
Service	20	32.6	212	820.1	64.9
Tourism & Hotel	15	39.7	138	402.9	26.4
Transport & Communications	26	44.3	303	612.3	28.4
Vehicle & Shipbuilding	10	37.7	445	2,199.1	283.1
Others	17	41.8	228	1,559.8	29.7
Total / Overall Average	184	39.8	223	76,084.6	8,734.1

4. The Business Growth and Financial Reporting

The financial reporting being the main and most conventional finance function always remains at the heart of most financial activity. The growth in business and financial activity is very much likely to affect the way this finance function is carried. The study focused on how, for growing businesses, this function gets transformed in its composition and deliverance over such period. The study focused not only on the overall financial reports like profit & loss account, balance sheet and cash flow statements ; rather it even focused deep inside the composition of these reports and tried to figure out whether reporting components also changed over that period. The study showed that financial reporting underwent both qualitative as well as quantitative change over the time.

4. 1 Quantitative Change in Financial Performance Reporting

Our findings reveal that the volume of financial data reported increased with increase in the age of the business. The increase in the data collected and reported was found positively correlated with the age of the business. The increase was recorded not only in the major financial reports like profit & loss account, balance sheet and cash flow statement; rather increase in the magnitude and frequency of reporting was recorded also in the components of such reports. (See Table 2)

It can be seen that there is clear pattern of financial reporting increasing with the age of the firm and the financial managers tend to prepare more reports as they move to an advanced stage of the business. It is obvious that invariably the total number of reports increased over time for almost all the firms across all the industries from a total of 254 to up to 367 in total. However in case of service, transport & communication, food and civil engineering the increase in the reports prepared was much more than others; as by the later stage of the business they were preparing more reports than others. Also the correlation between the business age and the number of reports is stronger by the later stage of business which stands at 0.628 and it remains positive throughout the business life. A similar pattern is also evident from the analysis of various components of the profit and loss account. The sales analysis, labor cost analysis and net profit analysis were being used more and more as businesses progressed through their life cycle. Firms across all the industries with the exception of consumer goods were preparing more components analysis to reach at certain operational results and decisions. In case of consumer goods, the component analysis reporting decreased from original 17 to 12 despite a little surge during the middle stage. Again throughout various stages of the business growth, the growth in components reporting showed a reasonable correlation with increase in

Table 2 - Relationship of Financial Reporting & Reporting Components to the Firm's Business Stage

Industry Type	Average Age	Volume of Financial Reports *			P & L Components Analysis Reports **		
		Early Stage	Growth Stage	Expansion Stage	Early Stage	Growth Stage	Expansion Stage
1. IT	26.1	10	19	14	10	21	15
2. Service	32.6	28	38	40	30	43	45
3. Print & Broadcast Media	41.4	11	12	17	13	15	18
4. Transport & Communications	44.3	29	42	50	30	45	52
5. Tourism & Hotel	39.7	23	21	25	24	27	27
6. Machinery Manufacturing	40.8	17	18	26	18	24	29
7. Construction	38.5	15	18	18	12	16	17
8. Vehicle & Shipbuilding	37.7	15	19	22	18	20	25
9. Food	41.2	39	42	56	44	49	51
10. Civil Engineering & Building	48.5	27	33	50	26	37	56
11. Consumer Goods Wholesale & Retail	27.9	12	18	12	17	21	12
12. Others	41.8	28	27	37	28	32	36
Total / Overall Average	39.8	254	307	367	270	350	383
Standard Deviation	13.6	11.7	10.3	14.2	9.2	11.9	14.7
Correlation - Age : Volume of Information		0.515	0.331	0.626	0.415	0.343	0.636
Covariance Age : Volume of Information		28.11	20.79	57.78	24.23	24.19	59.80

*Financial Reports included Profit & Loss Account, Balance Sheet and Cash Flow Statement

**P & L Components Included Sales Analysis, Labor Cost Analysis and Net Profit Analysis

average age. The same correlation was getting stronger by the later stage of business; it was 0.415 initially and rose to 0.636 by the later stage. (See Table 2)

A deeper look into the pattern of change in financial reporting reveals that though overall reporting grew more rapidly during the early stages of the business, may be due to statutory requirements; however by the later stages cost, sales and profit components were the ones that recorded most of the change. Figure 1 reveals this trend.

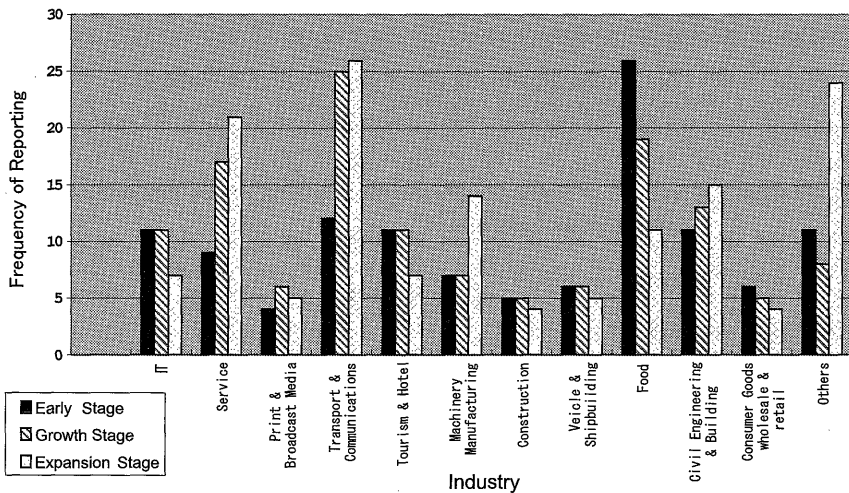


Figure 1 : Growth of Reporting Frequency Over Time

4. 2 Qualitative Change in Financial Reporting

The financial reporting grew not only in terms of frequency of reporting with the transition of a business through various stages of growth and development; it went through a qualitative change as well. The financial reporting as well analysis experienced a shift from rather typical performance related reporting towards more analytical style of the state of business

affairs.

The trend is evident from a look at the Table 3 where we see a clear shift towards more detailed analytics from simple conventional reporting. We can note two dimensional changes where financial reports like profit & loss account and other performance oriented reports are growing in numbers i.e. from 2.2 to 3.3 reports on the average from early stage through expansion stage. On the other hand the number of ratio analyses prepared has increased much more than that i.e. from 3.7 reports on the average to 5.9 reports by the expansion stage of the business. In all the overall average change in case of ratio analytics was 3.3 reports i.e. three times larger than that in case of operational performance reports which recorded an increase of 1.1 reports on the average. This emphasis on analytical tools also is

Table 3 : Growth of Financial Performance Evaluation Information over the Business Life

<i>Operating Performance</i>	Early Stage	Growth Stage	Expansion Stage	Overall Change
Profit & Loss Account	127	140	139	12
Sales	117	135	136	19
Net Profit	86	108	123	37
Labor Cost	66	103	121	55
Cash Flow Statement	16	38	95	79
Total	412	524	614	202
Average No. of Reports	2.2	2.8	3.3	1.1
<i>Ratio Analysis</i>				
ROE	47	72	100	53
ROA	41	58	89	48
Sales to Assets Ratio	33	50	78	45
Stock Turnover	33	39	58	25
Balance Sheet	111	129	133	22
Other	3	7	5	2
Total	1094	1406	1694	600
Average Ratio Analyses	5.9	7.6	9.2	3.3

indicative of the fact that, after business inception and initial nurturing, more and more focus is devoted towards the management and control of the internal affairs of the organization. This in turn leads to the development and strengthening of the internal control systems of the organization. So, it becomes necessary to look into the ways internal control systems of the organization are affected and transformed to accommodate the effects of growth and expansion in the business.

5. Business Growth and Internal Control Systems

Discussion in earlier sections showed that reporting takes a shift from conventional statutorily required financial reports towards more analytical reports meant to understand and control internally. The emphasis on preparing components analysis and the analytical ratios was a clear indicator of this. Hence, we moved on to look into how and what other internal control measure were adopted initially and were modified in later stages of the business. The upcoming analysis focuses two main areas of internal control activity i.e. operational control and investment control and impact of business aging on these aspects of internal control activity.

5. 1 *Business Growth & The Operational Control*

The Internal control tools tested for the sample firms included information about the preparation of various budgets against which the actual results were compared and analyzed. The data collected on this included profit & loss budgets, cash flow budgets, budgeted balance sheet, capital budgets, expense and revenue budgets. We inquired that which budgets were being prepared by various firms at different stages of the business. In addition to this, it was also checked that how frequently these budgets were being

prepared at various stages of the business. In addition to that the questionnaire focused on the fact that how many firms were preparing daily, weekly, monthly, quarterly, semi-annually or annually these budgets at various stages of their business life.

It was observed that internal control reports and measures were being used more and more as a firm moved on from earlier stage towards later stage of its life. The correlation of the number of various budgetary reports being prepared became stronger as a business progressed through growth stage towards expansion stage. We can see in Table 4 that correlation of volume of control information to the firm's age increased from 0.265 to 0.492 by the later stage. Also, in a similar fashion the number of various budgets prepared increased more than 2.5 times from an early stage towards the expansion stage. Further, the volume of information and the age showed a greater degree of covariance during the same transition from one stage to another.

The data reflected that most of the firms in the sample were preparing various budgets more frequently by the later stage of business as compared to the earlier stages showing a stronger correlation between the frequency of budgeting, increased internal control activity and the age of the business. On the average most of the firms followed the same pattern, a fact indicated by standard deviation figures for the three business stages which did not change much over various business stages. (See Table 4)

5. 2 *Business Growth & the Investment Control*

The major shift noted in control activity was the way in which investment evaluation and appraisal activity was handled as the businesses transitioned through various business stages. Investment appraisal tools registered least increase by the expansion stage. The investment performance indicators

Table 4 : Growth of Internal Control and Investment Information with Business Age

Company Type	Average Age	Volume of Control* Information Developed			Frequency of Budgets**			Capital Investment Tool***		
		Early Stage	Growth Stage	Expansion Stage	Early Stage	Growth Stage	Expansion Stage	Early Stage	Growth Stage	Expansion Stage
IT	26.1	13	22	33	7	9	7	3	6	5
Service	32.6	28	44	83	8	17	15	15	17	15
Print & Broadcast Media	41.4	11	12	21	4	6	5	4	5	6
Transport & Communications	44.3	23	60	111	12	24	27	15	20	22
Tourism & Hotel	39.7	31	30	53	11	11	8	15	15	9
Machinery Manufacturing	40.8	19	29	65	6	6	13	5	7	9
Construction	38.5	7	17	29	5	5	4	7	8	7
Vehicle & Shipbuilding	37.7	22	26	54	6	6	8	7	9	10
Food	41.2	59	68	121	11	19	26	18	26	28
Civil Engineering & Building	48.5	23	48	93	11	13	15	11	12	19
Consumer Goods wholesale & retail	27.9	15	28	37	5	5	4	5	11	6
Others	41.8	27	34	65	12	15	26	7	10	15
Total / Overall Average	39.8	278	418	765	98	136	158	112	146	151
Standard Deviation	13.6	11.3	16.2	33.8	6.6	7.0	8.0	6.9	6.9	7.3
Correlation - Age : Volume of Information		0.27	0.38	0.49	0.49	0.36	0.49	0.37	0.24	0.55
Covariance - Age : Volume of Information		21.29	38.56	95.74	8.99	13.49	26.08	11.58	8.93	24.03

*Internal Control Information Included P & L budgets, Cash Flow Budgets, Budgeted Balance Sheet, Capital Budgets, Expense Budgets and Revenue Budgets

**Frequency of budgets was asked as how often the budgets were being prepared daily, weekly, monthly, quarterly, semi-annually or annual through various business stages

***Capital Investment tools included Accounting Rate of Return, Net Present Value, Internal Rate of Return and Payback

rather went down for some firms from industries like tourism, services and consumer goods where they registered a decline from growth stage towards the expansion stage.

The reason behind this trend can only be the fact that need for investment analysis and various evaluation tools is greater in earlier stages of the business. However, it becomes less and less relevant once a business is already in progress and operation, by then only extensions to investment are analyzed and put to various evaluation tests. Table 4 shows that investment appraisal information picked up from early to growth stage, but slid down almost universally for all firm categories with the exception of few like civil engineering where it retains a steady increasing trend. The reason for the civil engineering case may be due to fact that these businesses take every new project on one-on-one basis and conduct these investment analyses every time a new venture is undertaken. Data in the Table 5 also shows a similar general trend where we can see the capital investment analysis information

Table 5 : Growth in Operating, Investment & Internal Control Information Over Time

Industry	Financial Information	P & L Components	Financial Ratios	Control Information	Capital Investment	Total
IT	4	5	8	20	2	39
Service	12	15	16	55	0	98
Print & Broadcast Media	6	5	10	10	2	33
Transport & Communication	21	22	27	88	7	165
Tourism & Hotel	2	3	10	22	-6	31
Machinery Manufacturing	9	11	18	46	4	88
Construction	3	5	4	22	0	34
Vehicle & Shipbuilding	7	7	10	32	3	59
Food	17	7	18	62	10	114
Civil Engineering & Building	23	30	36	70	8	167
Consumer Goods Suppliers	0	-5	4	22	1	22
Others	9	8	10	38	8	73

registering the least growth through various business stages.

6. Conclusion

In this paper we attempted to trace the transition patterns of accounting information system and internal control among the growing businesses through various stages of the business growth. The study covered a diverse range of financial and internal control data amongst a wide range of the business types and in this way represents broad spectrum of businesses in Hokkaido prefecture, Japan. The study established the fact that there is a strong correlation between a business's age and the way its accounting and internal control systems are shaped and dealt with. It was found that increase in the quantity as well as frequency of the financial reporting was directly and positively related with the age of the business. However, as a business passes through lateral stages of evolution, the financial and control system also undergo a qualitative change and transitions from a mere conventional system towards a need based system. More business owners and managers were interested in getting their hands on the detailed analytical and piecemeal information than mere routine reports required statutorily. It was further concluded that while with growth, business managers are interested in detailed operational and control information, at the same time investment related analytics take a back seat. As a result less and less of investment related information is gathered and analyzed especially in the later years of a business's age except for a few exceptions. This indicates a shift from investment related control and overseeing towards more operational and financial control as a business progresses through various stages of evolution in its life.

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