Enterprise Resources Planning System Usage Impacts Towards Financial Performance, Evidences From Indonesian Stock Exchange

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Previous researches results suggest various effect of information technology to firms' performance, some shows reflecting predictions of positive, negative, or nonexistent relationship. Prior research has examined technology Enterprise Resource Planning (ERP) and its impact on firm performance. Economic and industrial organization theories provide the basis for the examination of how ERP systems affect firms' coordination and transaction costs. ERP systems are expected to: (1) reduce costs by improving efficiencies through computerization; (2) enhance decision-making by providing accurate and Timely enterprise-wide information; (3) better communication with customers and suppliers; and (4) Better control over business. From 330 firms enterprises listed in Indonesian Stock Exchange, 35 manufacturing consumer goods will be used as the samples for this research. This research founds, in general, subsequent changes in ERP systems often help resolve or surface implementation issues that affect subsequent use of and success from the use of such systems. Specific findings indicate that ERP adopting firms, which initiate early enhancements in the form of add-ons or upgrades. Differential financial performance in comparison pre implementation of ERP and post implementation evidence from financial performance with indicators are inventory turnover ratio, net profit margin, gross profit margin, operating profit margin, pre-tax margin and cash flow ratio.

Keywords: ERP, financial performance, pre and post implementation of ERP

1. INTRODUCTION

Increasing complexity of competition in business world, have increased the difficulty for companies to select and implement appropriate strategies to win the competition. Existing strategy need to be equipped with fast service and low cost in order to strengthen competitiveness. One of the methods to achieve this success is by integrating information system. Improved efficiency in information system will produce more efficient in business process management (Shebab *et* al., 2004). The impact of this management efficiency is expected to improve companies' competitiveness in this competitive market (Tsamantanis & Kogetsidis, 2006; Suprijanto, 2006).

The current problem is there are some companies who have not integrating their information system in managing their organization. Currently in their process these companies are only supported by individuals activities at their own working location

(Warta Ekonomi, 2002). This reality could increase the misunderstanding in data communication between one working location to the others. Each individuals will deliver data to their own working locations, which could create underlying differences in data delivery. Therefore this process will be more time consuming compare with companies which have integrating their functions. Integrated data would help to established more efficient business process and ease the decision making process by company's management (Shebab *et* al., 2004).

One of the technologies to integrates each functions in a company is Enterprise Resource Planning (ERP). ERP technology is capable of integrating marketing function, production function, logistic function, finance function, human resource function and other functions (Baheshti, 2006). ERP has grown into an integration tool with main purpose to integrating all companies' application to center database which would be easily accessible by all departments who need it (Sabana, 2002). According to Leon (2005) as supported by Genoulaz & Millet (2006), data integration in ERP technology is done by using single data entry, in which one department taking the role of data inputing to be used by other functions in the company.

Enterprise Resource Planning (ERP) is a method to organize and manage companies' resources by utilizing information technologies (Spathis and Constantinides, 2003) which equipped by hardware and software. This technology function is to create coordination and integration of information data which will fasten decision making process by providing fast analysis, financial reports, on time sales report, production and inventories report (Gupta, 2000). Bradford & Florin (2003) expressed different opinion which stated that ERP technical compatibility technology does not have any influence towards satisfaction and effectiveness on key users of ERP hardware and software.

ERP program will be very helpful for companies which have broad business process by utilizing separate database and reporting tools. Business processes are a group of activities which required one or various inputs to produce customers' values as their output. ERP software supports more efficient business process by integrating activities from the whole business process including sales, marketing, manufacturing, logistic, accounting and staffing (Leon, 2005).

ERP implementation in Indonesian companies is expected to speed up business process, improve efficiency, and create bigger revenue. The problem is in the implementation process there are many factors which can creates failure in the process. One of these factors is lack of management's commitments. Management does not provide the best team for implementing this project includes team members' competency, credibility, creativity, ineffective leadership, low team commitment, overlapped responsibilities in the team, unclear working approach, and lack of comprehension in the team's purpose (Warta Ekonomi, 2002), Bradford & Florin research (2003) shows that top management's commitment in supporting ERP implementation team especially for the key users (functions managers) will bring significant improvement in work effectiveness. Top management supports can be in the form of communicating and explaining company's vision and mission thoroughly to the implantation team.

Second, sometime management does not even realize that e-business is not only an investment in information technology, but also improvement in business process with information technology support. This will make some companies do not even expect earn return from this action as they considered this only as investment in information technology and not a business investment supported by information technology. According to Goenawan (Warta Ekonomi, 2002) many companies in Indonesia made 1% - 2% of their income as investment in information technology and most of them can not earn their investment back. The third problem, as proposed by Goenawan, is due to the lack of management understanding on how to correctly implement e-business process. Managements do not provide effective support to e-business implementation in their companies.

The success of ERP implementation will be determined by management commitment (Yusuf *et al.*, 2006; Umble *et al.*, 2003; Soja, 2006; Nah *et al.*, 2001; Aladwani, 2001; Mabert *et al.*, 2001; Wu, 2001) which support and facilitate all needs required during the implementation. However, previous researches only explore the top managements' commitments on ERP implementation, they have not focus on the top managements' characteristics. This research will focus on the top managements' competence in producing commitment to support ERP implementation in manufacturing companies.

The application of various electronic business solutions which is known as e-business in Indonesia started to grow since 2002. Finance division is part of the company which mostly involved in this application. Mid 2002, business people in Indonesia believe that using e-business technology could improved company's performance, especially the one related with efforts to increase operational efficiency performance (Warta Ekonomi, 2002). Research conducted by Warta Ekonomi shows that around 54.2 % respondents companies have applied various e-business solution such as enterprise resource planning, supply chain management, and customer relationship management. From the same research, 31 companies out of 33 companies used as samples (93.9 %) stated that department which has the most involvement with e-business application is finance division. The other applications are involved with marketing division and production division. This survey also mentioned that around 41.9% companies in manufacturing are using e-business application/solution, recorded as the biggest users of this technology. These companies without hesitation mentioned that utilizing e-business solution could improve companies' productivity. This shown by the survey's result which stated that 26 out of 33 companies or 78.8% were experiencing productivity improvement (Warta Ekonomi, 2002).

Fan *et al.* as quoted in Yahaya Yusuf, *et al.* (2006) stated that ERP is an application of software system which could help organization in better controlling of the business due to stock and inventory reduction, stock turnover improvement, cycle time order reduction, productivity improvement, communication improvement and in the end will impacting on companies' benefit (profit) improvement. While Leon (2005) stated that ERP benefits are lead-time reduction, on time delivery, cycle time reduction, better customer satisfaction, better suppliers' performance, flexibility improvement, quality cost reduction, better usage of resources, information accuracy improvement and decision making ability.

Herdiawan reported in Warta Ekonomi (2003) that the application of ERP will bring some benefits for companies in food and beverages industries. These benefits are: established integrated system for subsidiaries in a group companies, improved information provided comprehensiveness, detail, and timeliness, made it easier for the board in making their analysis and decision, simplified business processes, reduced production costs, and created more controllable companies cash flows. Bradford & Florin (2003) explained that business process re-engineering does not have any significant influence towards effectiveness and satisfaction of of key users in implementing ERP. In contrast, Zhang, *et al*. (2005) claimed that business process re-engineering have positive significant influence towards users' satisfaction and individual impact, due to the fact that key user involvement in re-engineering process would make the software adaptation more suitable with companies' needs and this will speed up ERP implementation process.

In an interview with one of vice director of Indonesian company, Herdiawan (2006) reveals that added values brought by ERP application in this companies are as follows: 1) smoothness in making analysis and decision, 2) integrated business process and information system, 3) improved control and planning process, 4) significant reduced in inventory (up to 40%), and 5) Improved customer service. This fact is supported by Sun, *et al.* (2005) which pointed out that ERP data, includes master data, transactional files, data structure and maintenance data, has positive influence towards performance achievement in general.

Other researches on ERP implementation discussed about various variable which will influence the successfulness of ERP implementation (as shown in Table 1). On the othe hand, Xue *et al.* (2005) conducted a research on factors which influences the failure in ERP implementation. Xue *et al* bring up these factors of organizational culture, organizational environment and technical factors as the main contributors for failure in ERP implementation. This research was using 5 companies in China as its samples, which are cosmetics company, pharmaceutical company, electronic company, furniture company and mining company. Survey by Robbin-Giowa on American companies in 2001 reveals that only 51% companies experienced failure in ERP implementation (IT Cortex, 2003), which very contrast compared with China where the failure percentage is up to 90% as declared by Zhang *et al.* (2003). Griffith *et al.* (1999) reported that three out of four ERP project are confirmed to be failed in companies' implementation. Olhager and Selldin (2003) explain that 83.6% companies in Swedia have implemented ERP, 9% in the progress of implementing ERP and 11% do not have any plan to implement ERP.

Gillooly (1998) as quoted in Gargeya (2005) affirms that up to 70% of all ERP projects are failed to be fully implemented even after three years. The failure of ERP implementation can not be a responsibility of any single individual in a company as these implementation involves all parties in a companies. In general, Gillooly (1998) classified these failures into two levels, which are complete failure and partial failure. In a complete failure, the project might be stopped completely from the first stage of implementation or fail in the process of implementation which bring significant long term financial consequences to the company. While partial failure of ERP implementation would influence daily operation, and only create small disturbance or

down time. The ERP would be still be implemented in the company with minor disturbances in adaptation process.

Table 1. Factors of Successful ERP Implementation

Variables	Author /Source	Sun, et al. 2005	Yusuf, et al. 2006	Umble, et al. 2003	Hong, Kim, 2002	Zang, et al. 2005	Masha-ri 2003	Wu &Wang, 2007	Soja, 2006	Kumar, *et al., 2003*
1	Top Management Commitment	-	✓	✓					✓	
2	Time & Cost	✓	✓						✓	
3	Organization Culture		✓		✓	✓	✓			✓
4	Schedule & Target	✓		✓						✓
5	Technical Factors		✓							
6	Expertise		✓			✓				
7	Companies Facilities		✓							✓
8	Top Management Competence			✓					✓	
9	Project Team Competence			✓		✓			✓	✓
10	Key User							✓		
11	Product Data Management			✓	✓				✓	
12	Performance Measurement			✓			✓			
13	Business Process				✓	✓	✓			✓
14	End user				✓	✓	✓			
15	Consultant & Vendor					✓		✓		
16	Strength Product ERP (Software & Hardware)					✓	✓	✓	✓	✓
17	Training & Education			✓			✓	✓		✓
18	Companies Financial								✓	
19	System					✓			✓	✓

Research about the financial factor of ERP are relatively few, based on Table 1, only one research discuss this issue form the perspective of company financial. This research analyzed budget form financial aspect as one of determinant factor in the successfulness of ERP implementation (Soja, 2006). This research is fulfilling Wier

et al. suggestion which recommends to discuss this issue form the financial performance. Wier *et al.* (2007) declares that company's performance is the combination of enterprise resource planning implementation, non-financial performance, financial performance and control variables.

There are three competing predictions about market reaction to the ERP implementation announcements. First, markets fully impound the expected costs and benefits from the ERP implementation in stock prices, and no further future implication is expected (Dechow, 1994). Second, the stock market under-reacts (Lakonishok and Vermaelen, 1995) to the ERP announcement, therefore, the market has not completely impounded the expected costs and benefits from the ERP implementation; thus, we would expect to find future positive abnormal returns to the ERP implementation. Third, the stock market over-reacts to the ERP announcements (Bondt and Thaler, 1987, 1990); therefore we would expect to find negative abnormal returns in future periods.

For these reasons, we are unable to predict the direction of the stock returns in the current study, as the directional effect of ERP implementation on short-and long-term stock returns will depend on whether the market fully reacts, under-reacts or overreacts to the ERP announcement. While stock price efficiently aggregates information about firm performance, it inefficiently aggregates information about managers' actions (Feltham and Xie, 1994). Stock markets might fixate on one performance measure and ignore valuable information in other measures (Sloan, 1996). This situation can be avoided by using a different measure (Skinner, 1993) and by looking at returns accumulated over varying periods of time (Dechow, 1994).

Accordingly, we would analyze the study data by comparing mean pre and post implementation ERP in consumer goods manufacture using inventory turnover ratio, net profit margin, gross profit margin, operating profit margin, pre-tax margin and cash flow ratio as our indicators.

2. RESEARCH METHOD

This research observes the ERP technology adoption impacts toward financial performances of listed companies in Indonesian Stock Exchange, particularly companies which operate in consumer goods industry. Data taken using stratified sampling method with these following stages: selecting listed companies in Indonesian Stock Exchange based on the homogeneity of segment element which is consumer goods, afterward researcher contacted these companies in order to know when the company started to implement ERP technology. The communication was done using judgmental sampling with the purpose that the informants are appropriate and really understand these companies as the research object. There are 35 companies in consumer goods industry listed in Indonesian Stock Exchange, consist of 15 companies in food and beverages industry, 9 companies in pharmaceutical industry, 4 companies in cigarette industry, 4 companies in cosmetic industry and 3 companies in household equipments industry. Data collection done by observing and recording values related with Cost of Goods Sold (CoGS), total inventory, net income, gross income, operating income, pre-tax income, cash flow from operation, total liabilities, and total assets pre and post ERP launching.

Data assumed to be normally distributed based on the central limit theorem (McClave-Sincich, 2003, as quoted by Ari Christianti, 2006) which states that the bigger the sample size will caused the formed of binomial distribution to be closer to normal distribution which is a continuous distribution of binomial distribution with enlarged observation size. Therefore the assumption of the normality of data distribution has been fulfilled as the sample size is bigger than 30.

In order to test whether the ERP adoption has any impact toward financial performance, researcher will conduct a differential testing for condition prior to and after implementation using paired sample t-test on SPSS. The conclusion will be drawn by observing the resulted p-value. When p-value is higher than significant value, then we are failed to reject H_0 and have to reject H_1. This means that there are no differences in the companies' financial performances pre and post ERP launching. The hypotheses will be unproven and could not be accepted. On the other hand, if p-value is smaller than or equal to significant value means that we will reject H_0 and accept H_1. The research hypotheses will be proven and could be accepted.

Hypothesis used in this research will test whether there is any difference between characteristic values of COGS, total inventory, net income, gross income, operating income, pretax income, cash flow from operation, total liabilities, and total assets. These characteristic values will be used to calculate inventory turnover ratio, net profit margin, gross profit margin, operating margin, pretax margin and cash flow ratio. Hypotheses in this research are as follows:

H_1: Is there any difference between condition pre and post ERP launching in the factor of inventory turnover ratio?

H_2: Is there any difference between condition pre and post ERP launching in the factor of net profit margin?

H_3: Is there any difference between condition pre and post ERP launching in the factor gross profit margin?

H_4: Is there any difference between condition pre and post ERP launching in the factor operating margin?

H_5: Is there any difference between condition pre and post ERP launching in the factor pretax margin?

H_6: Is there any difference between condition pre and post ERP launching in the factor cash flow to liabilities?

H_7: Is there any difference between condition pre and post ERP launching in the factor cash flow to sales revenue?

H_8: Is there any difference between condition pre and post ERP launching in the factor cash flow to total assets?

3. RESULTS AND ANALYSIS

The analysis will be conducted to 33 companies out of 35 companies selected as samples. The other 2 companies have to be xcluded from the research as these companies have launched their ERP before they are listed in the stock market. The data collected is summarized in Table 2 to Table 5.

Table 2. Company Financial Data Pre ERP Launch

No	Company Name	Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin	CFO to Liabilities	CFO to Sales Revenue	CFO to total assets
1	Tiga Pilar Sejahtera Food Tbk (AISA)	13.7080	3.7934	-1.0709	0.1511	-0.5564	-1.1814	-0.1916	-0.1305	-0.1591
2	Aqua Golden Mississi Tbk (AQUA)	3.8934	13.3558	0.0004	0.1288	0.0818	0.0036	-0.0070	-0.0056	-0.0052
3	BAT Indonesia Tbk (BATI)	118.7470	0.4379	0.0647	0.1214	0.0830	0.0949	0.2105	0.0657	0.1230
4	Cahaya Kalbar Tbk (CEKA)	1.3197	39.4037	0.1325	0.4819	0.1933	0.2022	0.2092	0.0600	0.0854
5	Davomas Abadi Tbk (DAVO)	2.2071	23.5599	-0.0897	0.0833	0.0340	-0.1109	1.8104	1.1453	0.8259
6	Delta Djakarta Tbk (DLTA)	5.2641	9.8782	0.0121	0.0421	0.0301	0.0075	0.3710	0.2188	0.1453
7	Darya-Varia Laboratoria Tbk (DVLA)	7.5392	6.8973	0.2694	0.4674	0.2049	0.2568	0.4463	0.2474	0.1713
8	Gudang Garam Tbk (GGRM)	-1.7090	-30.4276	0.0513	0.1805	0.0898	0.0783	0.1480	0.0515	0.0606
9	H.M Sampoerna Tbk (HMSP)	1.3550	38.3762	0.1676	0.3716	0.2689	0.2313	0.0520	0.0324	0.0265
10	Indofarma Tbk (INAF)	2.5198	20.6365	-0.2601	0.0003	-0.0944	-0.3366	0.1106	0.0817	0.0640
11	Indofood Sukses Makmur Tbk (INDF)	5.8331	8.9146	0.1208	0.3188	0.1979	0.1819	0.2729	0.1806	0.1961
12	Kimia Farma Tbk (KAEF)	3.3193	15.6661	0.0930	0.3609	0.1222	0.1301	0.1282	0.0409	0.0490
13	Kedawung Setia Industrial Tbk (KDSI)	4.6922	11.0822	0.0418	0.0942	0.0159	0.0659	-0.0020	-0.0011	-0.0016
14	Kedaung Indah Can Tbk (KICI)	1.7625	29.5035	-0.1973	-0.0386	-0.2042	-0.2408	-0.0258	-0.0482	-0.0258
15	Kalbe Farma Tbk (KLBF)	2.6922	19.3148	0.1869	0.5140	0.2342	0.3023	0.1455	0.1686	0.0941
16	Langgeng Makmur Plastic I Tbk (LMPI)	1.9004	27.3633	0.0122	0.1770	0.0481	0.0219	0.0466	0.0226	0.0120
17	Merck Tbk (MERK)	-2.2047	-23.5860	0.2686	0.5898	0.3007	0.3825	0.3051	0.2153	0.3051

Table 3. Company Financial Data Pre ERP Launch (Cont.)

No	Company Name	Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin	CFO to Liabilities	CFO to Sales Revenue	CFO to total assets
18	Multi Bintang Indonesia Tbk (MLBI)	-5584.7697	-0.0093	0.1199	0.4289	0.1438	0.1790	0.2689	0.2085	0.2689
19	Mustika Ratu Tbk (MRAT)	2.3428	22.1960	0.0402	0.5596	0.0798	0.0600	0.0080	0.0103	0.0080
20	Mayora Indah Tbk (MYOR)	6.1566	8.4462	0.0373	0.2284	0.1207	0.0541	0.0456	0.0724	0.0456
21	Prasidha Aneka Niaga Tbk (PSDN)	7.8645	6.6120	-0.0144	0.1155	0.0463	0.0155	0.0494	0.0146	0.0300
22	Pyridam Farma Tbk (PYFA)	2.4376	21.3323	0.0201	0.6421	0.0480	0.0303	0.1358	0.0442	0.0403
23	Bentoel International Inv. Tbk (RMBA)	-5.7183	-9.0936	-0.0051	0.0838	-0.0111	-0.0078	0.1916	0.0420	0.0898
24	Schering Plough Indonesia Tbk (SCPI)	3.6139	14.3891	-0.0065	0.4688	0.0485	0.0068	-0.1595	-0.0877	-0.1572
25	Sekar Bumi Tbk (SKBM)	-9.8987	-5.2532	-0.0418	0.0904	-0.0131	-0.0188	-0.0422	-0.0194	-0.0369
26	Sekar Laut Tbk (SKLT)	6.9289	7.5048	0.0242	0.1733	-0.0048	0.0087	0.0407	0.0148	0.0192
27	Bristol-Myers Squibb Indonesia Tbk (SQBI/SQBB)	4.1839	12.4285	0.0968	0.5139	0.2033	0.1522	0.5423	0.1165	0.1457
28	Siantar TOP Tbk (STTP)	4.8283	10.7699	0.0260	0.1564	0.0266	0.0378	0.0409	0.0092	0.0109
29	Suba Indah Tbk	1.4784	35.1743	-1.2888	0.0013	-0.6608	-0.9038	-0.1600	-3.2263	-0.0629
30	Mandom Indonesia Tbk (TCID)	3.6261	14.3404	0.1026	0.3716	0.1425	0.1488	0.1758	0.1021	0.1692
31	Tempo Scan Pacific Tbk (TSPC)	3.6238	14.3494	0.1826	0.4582	0.1900	0.2179	1.0245	0.1894	0.2032
32	Ultra Jaya Milk Tbk (ULTJ)	3.7593	13.8324	0.0635	0.2053	0.1174	0.0559	0.0224	0.0217	0.0107
33	Unilever Indonesia Tbk (UNVR)	6.6134	7.8629	0.1442	0.4930	0.2032	0.2066	1.0044	0.1667	0.4335

Tabel 4. Company Financial Data Post ERP Launch

No	Company Name	Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin	CFO to Liabilities	CFO to Sales Revenue	CFO to total assets
1	Tiga Pilar Sejahtera Food Tbk (AISA)	10.9185	4.7626	-0.9537	0.0620	-0.9442	-0.9562	-0.2871	-0.9565	-0.5538
2	Aqua Golden Mississi Tbk (AQUA)	1.7213	30.2094	0.0586	0.3126	0.2310	0.1083	0.0537	0.0687	0.0330
3	BAT Indonesia Tbk (BATI)	50.7908	1.0238	0.0687	0.1065	0.0876	0.1001	0.2734	0.0635	0.1261
4	Cahaya Kalbar Tbk (CEKA)	1.1375	45.7130	0.1442	0.5068	0.2213	0.2064	0.0671	0.0401	0.0439
5	Davomas Abadi Tbk (DAVO)	2.6464	19.6494	0.0304	0.1101	0.0526	0.0445	0.2374	0.1153	0.1526
6	Delta Djakarta Tbk (DLTA)	8.5145	6.1072	0.1076	0.1362	0.1265	0.1252	0.4377	0.1553	0.1485
7	Darya-Varia Laboratoria Tbk (DVLA)	4.7344	10.9835	0.1457	0.4887	0.2297	0.2141	0.0816	0.0239	0.0211
8	Gudang Garam Tbk (GGRM)	-1.8549	-28.0336	0.0622	0.1705	0.1046	0.0878	2.5600	0.0747	0.0939
9	H.M Sampoerna Tbk (HMSP)	2.0327	25.5815	-0.0262	0.3322	0.2313	-0.0190	0.3675	0.1307	0.1163
10	Indofarma Tbk (INAF)	4.1354	12.5744	0.0140	0.2913	0.0513	0.0234	-0.2164	-0.0802	-0.1058
11	Indofood Sukses Makmur Tbk (INDF)	5.0433	10.3107	0.0510	0.2640	0.1389	0.0872	0.1380	0.0816	0.0920
12	Kimia Farma Tbk (KAEF)	4.1420	12.5544	0.0242	0.2988	0.0488	0.0421	0.2654	0.1732	0.2302
13	Kedawung Setia Industrial Tbk (KDSI)	6.1742	8.4222	0.0112	0.1214	0.0369	0.0190	0.0918	0.0396	0.0592
14	Kedaung Indah Can Tbk (KICI)	1.8622	27.9241	0.0328	0.1800	0.0684	0.0721	-0.0098	-0.0091	-0.0098
15	Kalbe Farma Tbk (KLBF)	3.1104	16.7180	0.0160	0.4825	0.1644	0.0527	0.0900	0.0826	0.0900
16	Langgeng Makmur Plastic I Tbk (LMPI)	1.6081	32.3365	0.0079	0.1862	0.0573	0.0125	-0.0171	-0.0294	-0.0171
17	Merck Tbk (MERK)	1.8872	27.5547	0.1694	0.5992	0.2316	0.2465	0.1641	0.1280	0.1641

Tabel 5. Company Financial Data Post ERP Launch (Cont.)

No	Company Name	Inventory Turnover	Weeks of Supply	Net Profit Margin	Gross Profit Margin	Operating Margin	Pretax Margin	CFO to Liabilities	CFO to Sales Revenue	CFO to total assets
18	Multi Bintang Indonesia Tbk (MLBI)	-6.1037	-8.5194	0.0826	0.4762	0.1471	0.1246	0.2732	0.1871	0.2732
19	Mustika Ratu Tbk (MRAT)	2.8996	17.9337	0.0724	0.5567	0.0822	0.1034	0.0858	0.0989	0.0858
20	Mayora Indah Tbk (MYOR)	6.5548	7.9331	0.0767	0.2708	0.1368	0.1122	0.1002	0.1163	0.1002
21	Prasidha Aneka Niaga Tbk (PSDN)	8.2693	6.2883	0.0132	0.1487	0.0876	0.0590	0.5493	0.1162	0.2887
22	Pyridam Farma Tbk (PYFA)	2.3230	22.3851	0.0193	0.6553	0.0515	0.0305	0.0251	0.0062	0.0075
23	Bentoel International Inv. Tbk (RMBA)	-2.9314	-17.7389	0.0497	0.1961	-0.0059	0.0484	0.1672	0.0559	0.0661
24	Schering Plough Indonesia Tbk (SCPI)	2.3543	22.0875	0.0151	0.4814	0.1045	0.0370	-0.0388	-0.0289	-0.0383
25	Sekar Bumi Tbk (SKBM)	-12.6736	-4.1030	-0.0487	0.1106	0.0149	-0.0143	0.0881	0.0217	0.0645
26	Sekar Laut Tbk (SKLT)	5.8836	8.8381	0.0136	0.1817	0.0226	0.0235	0.1272	0.0408	0.0635
27	Bristol-Myers Squibb Indonesia Tbk (SQBI/SQBB)	4.6331	11.2235	0.1821	0.6214	0.3200	0.2658	0.9397	0.2213	0.2573
28	Siantar TOP Tbk (STTP)	3.0150	17.2471	0.0077	0.1451	0.0467	0.0059	-0.0371	-0.0157	-0.0156
29	Suba Indah Tbk	6.9808	7.4490	0.3053	-0.1434	-0.2267	-0.4348	-0.0654	-0.1174	-0.0500
30	Mandom Indonesia Tbk (TCID)	3.6970	14.0654	0.1092	0.3958	0.1489	0.1579	3.4630	0.1753	0.2462
31	Tempo Scan Pacific Tbk (TSPC)	4.4689	11.6360	0.1519	0.4556	0.1794	0.2046	0.8316	0.1510	0.1651
32	Ultra Jaya Milk Tbk (ULTJ)	2.3055	22.5547	0.0153	0.3251	0.1750	0.0216	0.0071	0.0082	0.0036
33	Unilever Indonesia Tbk (UNVR)	7.2857	7.1373	0.1566	0.5020	0.2214	0.2249	0.8525	0.1794	0.4219

The hypothesis will be tested by comparing the mean pre and post ERP launch. This could be written in statistical form as follows:

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of inventory turnover.

$H_1 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of inventory turnover.

The test result, using SPSS version 13.00, shows that the significant value is 0,014 (see table 6 and 7). As this value is lower than the critical value of 0.050, we would reject H_0 and accept H_1. Therefore this result support the hypothesis that there is significant difference between pre and post ERP launch in inventory turnover ratio. The data show an increase in the ratio, which means and improvement in effectiveness and efficiency for the companies.

Table 6. Paired Samples Statistics Inventory Turnover

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	-162.729997	33	973.5678593	169.4764109
	After Launching ERP	4.471694	33	9.3758305	1.6321226

Table 7. Paired Samples Correlations Inventory Turnover

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.622	.014

Further examination on weeks of supply revealed that ERP launch would make the companies' operation to be less efficient. This is shown by the higher weeks of supply as shown in table 8 and 9.

Table 8. Paired Samples Statistics Weeks of Supply

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	11.789452	33	15.0920981	2.6271971
	After Launching ERP	12.448767	33	14.2745975	2.4848885

Table 9. Paired Samples Correlations Weeks of Supply

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.684	.000

This maybe indicates that the suppliers could not efficiently adapt to the changes brought by ERP. Supplier needs time to comprehend and utilize the maximum portential of ERP. This learning time, bring the increase in weeks of supply post ERP launch.

Net profit margin factor would be analyzed using this hypothesis:

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of net profit margin.

$H_2 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of net profit margin.

Table 10. Paired Samples Statistics Net Profit Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	-.021088	33	.3193901	.0555987
	After Launching ERP	.035939	33	.1918401	.0333951

Table 11. Paired Samples Correlations Net Profit Margin

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.438	.011

The test result, in table 10 and 11, shows significant value of 0.011 which is lower than critical value of 0.050, therefore we would reject H_0 and accept H_1. This proven the alternate hypothesis which stated that there is difference between pre and post ERP launch in the factor of net profit margin. The average net profit margin increase from -0.021 to 0.359; this indicates that the companies profit and competitiveness are improved by ERP application.

In order to test the impact of ERP launch to gross profit margin, we used this hypothesis:

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of gross profit margin.

$H_3 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of gross profit margin.

Table 12. Paired Samples Statistics Gross Profit Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.273788	33	.1982646	.0345134
	After Launching ERP	.303882	33	.1916605	.0333638

Table 13. Paired Samples Correlations Gross Profit Margin

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.905	.000

The test result, in table 12 and 13, shows significant value of 0.000 which is lower than critical value of 0.050, therefore we would reject H_0 and accept H_1. This proven the alternate hypothesis which stated that there is difference between pre and post ERP launch in the factor of gross profit margin. The average gross profit margin increase from 0.274 to 0.304; this indicates that the companies profit and competitiveness are improved by ERP application.

We used similar method to test the effect towards operating margin. For this factor we used this hypothesis:

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of operating margin.

$H_4 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of operating margin.

Table 14. Paired Samples Statistics Operating Margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.052427	33	.2004439	.0348928
	After Launching ERP	.080121	33	.2090936	.0363985

Table 15. Paired Samples Correlations Operating Margin

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.819	.000

The result is similar with previous factor, this time we got significant value of 0.000 which is lower than 0.050, which we concluded as an indicator to accept H_1. This means that ERP launch has significant impacts towards operating margin. The average operating margin increased from 0.0524 to 0.0801 which once again show improvement in company's profit and competitiveness.

The fifth hypothesis testing, on pretax margin, is shown in table 16 and 17.

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of pretax margin.

$H_5 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of pretax margin.

Table 16. Paired Samples Statistics Pretax margin

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.010082	33	.3082785	.0536644
	After Launching ERP	.043542	33	.2159359	.0375896

Table 17. Paired Samples Correlations Pretax margin

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.899	.000

The test result shows significant value of 0.000 which is lower than critical value of 0.050, therefore we would reject H_0 and accept H_1. This proven the alternate hypothesis which stated that there is difference between pre and post ERP launch in the factor of pretax margin. The average gross profit margin increase from 0.101 to 0.435; this indicates that the companies profit and competitiveness are improved by ERP application.

We analyzed the cash flow ratio using these three indicators as follows: cash flow to total liabilities, cash flow to sales revenue and cash flow to total assets. These hypothese were used to test the prediction:

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of cash flow to total liabilities.

$H_6 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of cash flow to total liabilities.

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of cash flow to sales revenue.

$H_7 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of cash flow to sales revenue.

$H_0 : \mu_1 = \mu_2$ There is no significant difference between pre and post ERP in the factor of cash flow to total assets.

$H_8 : \mu_1 \neq \mu_2$ There is significant difference between pre and post ERP in the factor of cash flow to total assets.

The results are shown in table 18 to table 23. Based on these tables, only cash flow to total asset has significant value lower than critical value of 0.050.

Table 18. Paired Samples Statistics Sales to Liabilities

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.218742	33	.3943813	.0686530
	After Launching ERP	.353515	33	.7481454	.1302354

Table 19. Paired Samples Correlations Sales to Liabilities

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.180	.317

Table 20. Paired Samples Statistics CFO to Sales revenue

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.000739	33	.6155865	.1071599
	After Launching ERP	.039948	33	.1959576	.0341118

Table21. Paired Samples Correlations CFO to Sales revenue

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.234	.190

Table 22. Paired Samples Statistics CFO to Total Assets

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Before Launching ERP	.096503	33	.1785204	.0310764
	After Launching ERP	.079518	33	.1601709	.0278822

Table 23. Paired Samples Correlations CFO to Total Assets

		N	Correlation	Sig.
Pair 1	Before Launching ERP & After Launching ERP	33	.538	.001

The results show that CFO to total liabilities and CFO to sales revenue do not have significant difference between pre and post ERP launch. Their significant values are 0.317 and 0.19 respectively which means we accepted H_0 and reject alternate hypotheses. As for CFO to total assets, the significant value is lower than critical value which means that CFO to total assets differs significantly between pre and post ERP launch. The average CFO to total assets actually decreased from 0.965 to 0.795.

4. CONCLUSION

Based on the analysis done using data from 33 consumer goods companies listed in the Indonesian Stock Exchange by comparing the average of financial condition between pre and post ERP launch using inventory turnover ratio, weeks of supply, net profit margin, gross profit margin, operating margin, pretax margin , and cash flow ratio, we concluded these findings:

1. There is significant difference between the condition pre and post ERP launch in the factor of inventory turnover ratio, which is increased from -162,73 to 4,47.
2. There is significant difference between the condition pre and post ERP launch in the factor of net profit margin, which is increased from -0,211 to 0,359; this indicates an increase in the company's competitiveness.
3. There is significant difference between the condition pre and post ERP launch in the factor of gross profit margin, which is increased from 0.274 to 0,304; this indicates an increase in the company's competitiveness.
4. There is significant difference between the condition pre and post ERP launch in the factor of operating margin, which is increased from 0.0524 to 0,0801; this indicates an increase in the company's competitiveness.
5. There is significant difference between the condition pre and post ERP launch in the factor of pretax margin, which is increased from 0.0101 to 0,0435; this indicates an increase in the company's competitiveness.
6. There are no significant difference between the condition pre and prost ERP launch in the factor of CFO to total liabilities and CFO to sales revenue. However, CFO to total assets shows significant difference.

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