

CHAPTER IV

DATA ANALYSIS

A. Data Analysis of ABCD Checklist

A.1. Respondent Profile

Respondents are selected based on and BPIC (Business Performance Improvement Consultancy) requirement, that is, respective managers of related department/function. The Oliver Wight ABCD checklist required knowledgeable respondents to fill the checklist and the need for a second opinion from a lower position to view better results than the upper side's point of views. Referring to these requirements, both states by BPIC and Oliver Wight ABCD Checklist, respondent subject to this research consists of managers and supervisors or power-users (know-how users) of ERP system from Planning and Export, Purchasing, Finance, Accounting, DNS, Production, and Warehouse department related to operations of Gresik plant only. Total number of respondent is 18 employees with following details:

1. Planning and Export (1 manager and 1 supervisor)
2. Purchasing (1 manager and 1 supervisor)
3. Finance (1 manager and 1 supervisor)
4. Accounting (1 manager and 1 supervisor)
5. Production (3 managers and 3 supervisors)
6. Warehouse (1 manager and 1 power-user)
7. Development of Network System (1 manager and 1 power-user)

These respondents considered knowledgeable as these people underwent ERP systems training and education during the ERP system development project and

understand the business processes within their department. Respondent is also selected based on his/her role and responsibility related to the processes of providing resources, manufacturing products, fulfilling customer demand and ERP system programs (applicable to DNS department only).

A.2. People and Team Process

Below table is result of ABCD checklist within People and Team Process at PT. XYZ Indonesia.

Table 1 People and Team Process

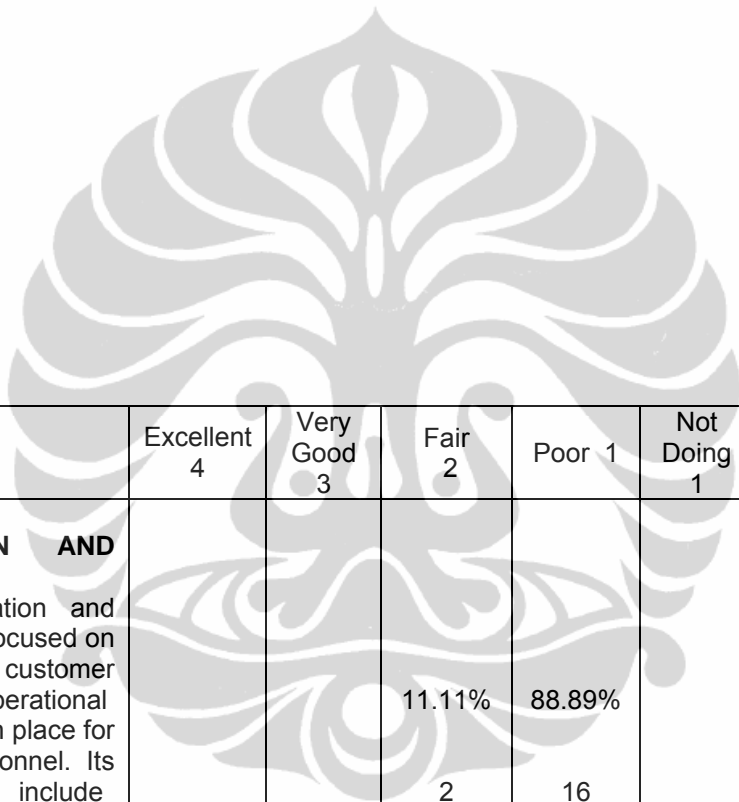
Total Respondent : 18

Total Returned Checklist: 18

	Excellent 4	Very Good 3	Fair 2	Poor 1	Not Doing 1	Total Respondent
<p>1. CULTURE A comprehensive culture exists to support and enhance effective people and team processes.</p> <p>1.a. Employees are empowered to take direct action whenever they encounter a problem that is likely to impact customer satisfaction, product or service quality, cost, and/or schedule.</p> <p>1.b. Information-passing processes, such as meetings and 'state-of-the-business' assemblies are regularly scheduled.</p>		44% 8	55.56% 10			100% 18

	Excellent 4	Very Good 3	Fair 2	Poor 1	Not Doing 1	Total Respondent
<p>2. TRUST Openness, honesty, and constructive feedback are highly valued and demonstrated organizational traits.</p> <p>2.a. Communication flows from management throughout the company visa versa.</p> <p>2.b. Communication between management and workers are continuously improved and practiced as a routine task.</p> <p>2.c. The information flow is adequate and timely enough for people at all levels to understand the current performance of the (e.g., customers, competition, strategies, profitability) and effectively utilization of data (e.g., quality, service level, schedule, etc.) for problem identification, resolution, Improvement, and recommendations.</p>		16.67% 3	66.66% 12	16.67% 3		100% 18

	Excellent 4	Very Good 3	Fair 2	Poor 1	Not Doing 1	Total Respondent
<p>3. TEAMWORK Clearly identifiable teams are utilized as the primary means to direct, organize, and perform the work, as opposed to individual job functions or departments</p> <p>3.a. The roles/jobs have been formally structured to support the work team approach.</p> <p>3.b. Teams have clear direction and complete understanding of their scopes, responsibilities, and operating guidelines.</p>		66.67% 12	33.33% 6			100% 18



	Excellent 4	Very Good 3	Fair 2	Poor 1	Not Doing 1	Total Respondent
<p>4. EDUCATION AND TRAINING An active education and training program focused on business issues, customer issues and operational improvements is in place for all company personnel. Its objectives include enhancing employee's skills, increasing process flexibility, ERP system.</p> <p>4.a. Management views education and training as a strategic advantage. Management commit and involve to educate and train all necessary people prior to the implementation of new process and tools/ technology.</p> <p>4.b. The company has committed adequate resources, time, and finances to education and training.</p>			11.11%	88.89%		100%
			2	16		18

4.c. An ongoing education and training program is used to refine and improve the use of business tools such as team-based technologies, integrated business planning processes (ERP System), software, etc.						
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Extracted from the Oliver Wight ABCD checklist “People and Team Process”)

The questionnaire results are calculated using following formula:

$$f(x) = \frac{\sum (n_1x_1 + n_2x_2 + n_3x_3 + n_4x_4 + n_5x_5 \dots)}{\sum n}$$

Details of the above formula:

$n_{1,2,\dots}$ = total respondent of each item checked

$x_{1,2,\dots}$ = score of each item checked

$f(x)$ = total score

n = total respondent

Using the above mentioned formula, the questionnaire results are scored as follows:

1. Culture = $\frac{(8 \times 3) + (10 \times 2)}{20}$ = 2.4 ≈ **2 (fair)**

18

2. Trust = $\frac{(3 \times 3) + (12 \times 2) + (3 \times 1)}{18} = 2$ (**fair**)
3. Teamwork = $\frac{(12 \times 3) + (6 \times 2)}{18} = 2.67 \approx 3$ (**fair**)
4. Education/Training = $\frac{(2 \times 2) + (16 \times 1)}{18} = 1.11 \approx 1$ (**poor**)

Overview of Culture, Trust, Teamwork and Education/Training at PT. XYZ Indonesia is revealed as below:

1. Overview of "Culture" at PT. XYZ Indonesia subject to checklist can be described through the fact that:

1.a. All employee understand properly their role and responsibility and are capable of providing solution when encounter problems. For an instance, finance department can process expedited payment without formal documentation when marketing department or other operational departments required an urgent payment. Another example is when production is facing problem of poor quality product, then marketing department frequently phase in and provide a reschedule initiative to resolve problem as well as communicating the problem arise with customer. This finding shows a condition where all employees are empowered to take direction which may deteriorate company's relation with supplier and customer caused by late payment and production problems.

1.b. Formal meetings assisted by management and all employees are scheduled monthly and time to time based on work requirement. Informal meetings states-of-the-business between employees are frequently effected at the plant side only, while Jakarta office establishes this kind of assemblies rarely. Through this fact, it is revealed that information-passing process is widely organized at the plant side but rarely at Jakarta Office.

2. Overview of “**Trust**” at PT. XYZ Indonesia subject to checklist can be described as follows:

2.a. Management and employees communicate time to time based on work requirements via informal meetings, e-mail or phone calls. This situation indicates that communication has been established properly visa versa between management and employees.

2.b. Survey reveals a condition that communication between management and employees are scheduled for each month and from time to time only. Communication flows is being improved through informal activities between management and employees but the objective is not clear to employees result in lack of trust about management’s good will.

2.c. As information and communication flows are established based on requirements and from time to time, many employees suffer from lack of understanding about their department’s objective and impacts of their activities to performance of other function/departments. Survey reveals a finding, for an instance that Marketing Department is unaware about the importance of key-in sales orders in a timely manner because this activity will eventually affect material and production planning performance.

3. Overview of “**Teamwork**” at PT. XYZ Indonesia subject to checklist is described as follows:

3.a. PT. XYZ Indonesia has a clear structure and hierarchy of its organization. This structure and hierarchy provides a clear guideline related to reporting and decision-making process.

3.b. Survey shows that, despite of defined formal role/jobs of each employee, some of management and employees still suffer from lacking in understanding about which employee should be contacted when encounter a problem or require certain information. This situation indicates lack of information-sharing about employee's role and responsibility.

4. Overview of “**Training/Education**” at PT. XYZ Indonesia subject to checklist is described as below:

4.a. During the project of ERP (Enterprise Resource Planning) system application, PT. XYZ showed its commitment on the importance of providing users with adequate knowledge through training and education related to this new system. Support and commitment is shown through providing appointed employees with sufficient allowance, accommodation and facilities during the implementation project. All users (employees whose works related with the system) were also trained before the system is formally used and consultants were assigned in the early period of ERP system application to ensure appropriate usages and solve problem such as error-entry.

4.b. PT. XYZ Indonesia's commitment (resources, time and finances) is significantly shown during ERP system application project but other professional training/education is established from time to time without clear schedules and objectives. This condition indicates lack of commitment from management about employee's skill development.

4.c. Enterprise Resource Planning system has been formally deployed for more than 4 years at PT. XYZ Indonesia but on-going training for all users has never been applied afterwards. New employees are trained informally through day to day operations under guidance of their supervisors. This

condition may result in deterioration of user's knowledge on the system utilization which eventually decreases the system's effectiveness.

Refer to the above ABCD checklist table results, average scores of the assessed items (culture, trust, teamwork and education/training) can be calculated as follows:

- Total scores of overview items = 8
- Average scores of overview items = $8/4 = 2.00$
- The calculation result leads to following findings:
 - Based on ABCD checklist guide, the letter grade of people/team process in PT XYZ Indonesia is class C.
 - The qualitative characteristics of class C are described as a phenomenon/process in which "traditional employment practices are largely used, management considers the company's people to be important, but not vital, resource of the business. There is use of small work groups in some areas of the organization".

A.3. Planning and Control Process

Results of ABCD checklist within Planning and Control Process at PT. XYZ Indonesia show following responses and scores.

Total Respondent : 18

Supporting Data : ERP Track Records and Interview Results

Data Source : Extracted from the Oliver Wight ABCD Checklist “Planning and Control Process”

➤ **Sales and Operations Planning**

1. SALES AND OPERATIONS PLANNING	SCORE
<p>The sales and operations planning process focuses on customer requirements, supports the annual business plans, and aligns the entire organization in support of business strategy.</p> <p>1.a. Inventory (finished goods) and/or delivery lead time (backlog) strategies are reviewed each month as part of the process.</p> <p>1.b. Rough-cut capacity planning is used to validate the reasonableness of the sales and operations plans.</p>	<p>Very Good (3)</p>

The item of this checklist is addressed to Managers, Supervisor and power-user of Warehousing and Planning and Export departments. Results are made based on interview and ERP system track records.

1.a. Inventory (finished goods) is reviewed daily and monthly but delivery lead time (backlog) is not reviewed, delivery is made based on requested delivery date and stock availability or available to promise (delivery promise made based on produce to stock planning). Record of inventory status is displayed on the ERP system.

1.b. Rough-capacity planning (summation of resources required either for sales and operations plan or production planning) is made on annual basis and adjustable based on order demand and production capacity. Annual planning exists for production and funds measures. Data production and financial plan can be viewed in the ERP system.

➤ **Financial Planning, Reporting and Measurement**

2. FINANCIAL PLANNING, REPORTING AND MEASUREMENT	SCORE
<p>Finance uses ERP system for financial planning, reporting and measurement.</p> <p>2a. All annual financial plans are congruent with the business strategies and include detailed financial information by department.</p> <p>2b. Finance uses ERP system as other functions for sales, operations, shipments and any other operating information.</p> <p>2c. All financial systems (billing, accounts payable, cost accounting are fully integrated with all operating systems, and the information is accurate.</p> <p>2d. Accounts payable, purchasing, and receiving systems are integrated with all material receipt transactions.</p> <p>2e. All shipment transactions update the appropriate inventory and the billing system at the same time.</p>	<p>Very Good (3)</p>

The item of this checklist is distributed to Manager and Supervisor of Finance department. Results are made based on interview and ERP system track records.

2.a. All annual financial plans are congruent with the sales and operations and include detailed information for each operation/item. The annual financial plan is used as a guide for expenses of each department and adjustable based on requirements. Annual financial plans can be viewed in the ERP system.

2.b. Finance uses ERP system as other functions, particularly in cash arrangement for purchased material payment and other operational expenses, such as ocean freight, insurance and claim payments.

- 2.c. All financial systems (billing, accounts payables, cost accounting) are integrated in the system. Finance department can view outstanding receivables and payables as well as other costs in the system, thus, enables finance department to arrange cash in timely manner. Data accuracy is controlled and monitored monthly for financial closing and any substantial error-entry (amount, currency or quantity) is promptly recognized. Completion status of each process is also displayed in the ERP system.
- 2.d. Accounts payables, purchasing and receiving systems are integrated with all material receipt transactions. Detail can be viewed in the ERP system track record.
- 2.e. All shipments transactions update the inventory and billing system at the same time. Every entry of material receipt and order invoicing in the ERP system updates automatically the inventory stock and billing operations. Sales order is used for data cross checking between Finance and Export department or Purchase Order number between Finance and Purchasing department.
- 2.f. The Finance department scores the Financial Planning, Reporting and Measurement as very good (score result is 3). Finance department does not rate themselves as excellent because even the system displays real-time information; many outstanding receivables are still present causing problems in cash arrangement for payables operations.

➤ **Sales and Plan**

3. SALES AND PLAN	SCORE
<p>Formal sales planning process is in place. Differences between the sales plan and actual sales are reconciled, and sales plan performance is measured.</p> <p>3a. Actual sales are measured against sales plan. Performance for sales responsibility and accuracy of the sales plan are measured.</p>	<p>Very good (3)</p>

3b. Sales areas are provided with useful feedback regarding their performance to plan at least monthly.	
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The item of this checklist is addressed to Manager and Supervisor of Planning and Export department. Results are made based on interview and ERP system track records.

3.a. Actual sales are measured against sales plan. XYZ Corporation send annual sales plan with monthly breakdowns. Export and planning department arranges order delivery based on defined quantity per area and measures monthly as sales achievement. Total sales quantity, detail sales plan and delivery are also displayed on the ERP system.

3.b. Sales areas are provided with useful feedback regarding their performance to plan monthly. As ERP system linked directly to XYZ Corporation, sales plan can be monitored and controlled on-line, enables XYZ Corporation to phase-in and to establish delivery priorities for each area. By this means, XYZ Corporation provides useful feedback but frequent late information due to lack of monitoring occurs causing Export and Planning department face problems with production and schedules arrangements. This condition leads to the need for backdates (put forward shipment date against actual shipment date) to meet sales target.

3.c. Planning and Export department rate this checklist item as very good (score result is 3).

➤ **Customer Planning and Satisfaction**

4. CUSTOMER PLANNING AND SATISFACTION	SCORE
Customer order entry and promising are integrated with master scheduling and inventory management.	

<p>4a. Customers orders are processed on a timely basis. The number of customer's orders awaiting processing is measured and managed.</p> <p>4b. Order-entry errors are measured and managed to eliminate the causes of the errors.</p>	<p>Very Good (3)</p>
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The item of this checklist is addressed to Manager and Supervisor of Planning and Export department. Results are made based on interview and spreadsheet specimens.

4.a. Customer orders are processed on a timely basis and the numbers of customers orders awaiting processing is measured and managed. Customer Service uses Stuffing Plan Table to control and monitor customers orders processing and the process is done on daily basis.

4.b. Orders-entry errors are not measured but reviewed from time to time, particularly for monthly sales closing process.

4.c. Based on criteria that Planning and Export department should be able to achieve sales performance while eliminate complaints and claims due to late delivery or unconformity to customers demand, the item of Customer Planning and Satisfaction is scored with very good result (score is 3).

➤ **Master Scheduling**

5. MASTER SCHEDULING	SCORE
<p>The master schedule is reconciled monthly with the production plan resulting from the sales and operations planning process.</p> <p>5.a. The master scheduling process is managed in order to ensure a balance of stability and responsiveness. The master schedule is</p>	<p>Very Good (3)</p>

Reconciled monthly with the production plan resulting from the Sales and operations planning process.	
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The item of this checklist is addressed to Managers and Supervisors of Production and Purchasing department. Results derive from interview results and ERP system record.

- 5.a. Annual Master Scheduling exists (see attachment 6) and is processed monthly. A regular monthly meeting is assisted by Production, Purchasing, Planning and Export department to reconcile capacity, production planning and funds measures.
- 5.b. Planning bills of material (required resources to make a product) is displayed in the ERP system and integrated with sales and production planning. Material planning is reviewed and safety stock is monitored on daily basis to ensure production and sales processing balance.
- 5.c. The Production, Purchasing, Planning and Export departments rates Master Scheduling item as very good (scores 3).

➤ **Material Planning and Control**

6. MATERIAL PLANNING AND CONTROL	SCORE
<p>Material planning process exist to maintain valid material plans along with a control process that communicates priorities through production schedules, supplier schedules.</p> <p>6.a. The material planning system is run as frequently as required to maintain valid schedules. Daily may be required, but weekly processing is a minimum.</p>	<p>Fair (2)</p>

The item of this checklist is addressed to Manager and Supervisor of Purchasing Department. Results derive from interview results.

6.a. Material Planning system is monitored daily for local material purchasing and weekly for imported material purchasing. Safety stock of each material is maintained to anticipate increasing demand.

6.b. Score of this item defined by Purchasing department is fair (score 2). The low score of supplier evaluation is viewed as the main problem of providing material at the right time in conformed quality and quantity.

➤ **Supplier Planning and Control**

7. SUPPLIER PLANNING AND CONTROL	SCORE
<p>Supplier planning and scheduling process exists that ensure effective control of material supply.</p> <p>7.a. Supplier commit to provide right quality, quantity and meet planned schedules.</p> <p>7.b. Time periods on the supplier schedule are weeks or smaller based on agreement.</p>	<p>Fair (2)</p>

The item of this checklist is addressed to Manager and Supervisor of Purchasing department. Results derive from interview results and ERP system record.

7.a. Purchase Execute provides information on material delivery status. It defined planned delivery and material receipt (release). While Supplier Evaluation is integrated in the ERP system enables purchasing department to evaluate

supplier performance in providing right quantity, quality and meet delivery schedules.

7.b. Time periods of the supplier schedules are two weeks from Purchase Order placement for local material purchase and one month for imported material purchase.

7.c. Purchasing department scores Supplier and Planning control to be fair (score 2) due to supplier performance total score is quite low (total scores below 50% still present). Interview result reveals this situation and supplier performance displayed on the system.

➤ **Capacity Planning and Control**

8. CAPACITY PLANNING AND CONTROL	SCORE
<p>A capacity control process is used to measure and manage manufacturing requirements, work throughput, and queue levels.</p> <p>8.a. Works centres are defined to enable control and capacities. Data and reports are maintained and managed.</p> <p>8.b. There is a process to control actual input, output and queue levels and including the work centres.</p>	<p>Fair (2)</p>

The item of this checklist is addressed to Managers and Supervisors of Production and Purchasing departments. Results derive from interview and ERP system record.

- 8.a. ERP system defines production centre/storage location and any error entry will be automatically blocked by the system. To make a product, production department must input required raw materials and the system will display the storage location. Any used material and finished goods results are maintained daily and displayed on the system.
- 8.b. Inventory record of material and finished goods as well as delivery planning (attachment 19) shows delivery and planning is maintained in the system and reviewed daily.
- 8.c. Production and Warehouse departments scores Capacity Planning and Control as fair (score result is 2). Reason of scoring this item as 'fair' is mainly caused by the facts that supplier performance is not quite good which in some cases result in inability to meet urgent orders due to material shortage.

➤ **Production Planning and Control**

9. PRODUCTION PLANNING AND CONTROL	SCORE
<p>Production planning and control synchronizes production schedules and made based on manufacturing priorities.</p> <p>9.a. The planning and control process includes a capability to display production schedules on a daily basis. These schedules are shown on the system.</p> <p>9.b. The production schedules are expressed in weekly, daily, or smaller time periods.</p> <p>9.c. Point-of-usage inventory in production is managed using formal Inventory managed using formal inventory principles. Inventory's record accuracy measurements and cycle counting procedures are used.</p>	<p>Fair (2)</p>

The item of this checklist is addressed to Managers, Supervisor and Power User of Production and Warehouse departments. Results derive from interview and ERP system record.

9.a. Delivery/Production planning process is displayed on the system and used by production and warehouse for products arrangement. Anyway, spreadsheet extracted from Stuffing Plan Table and ERP system record is used to support production/delivery planning.

9.b. The production schedule is expressed daily based on sales order/delivery planning of Planning and Export department. Delivery plan is reported daily by Warehouse department to Production department.

9.c. Point of usage inventory in production is defined by material storage location and used by production department when making a product. Any deficit will be automatically notified by the system.

9.d. Production and Warehouse departments scores Production Planning and Control as fair (score result is 2). Reasons of scoring this item this way particularly because Planning and Export department does not input in the system all received customer orders in timely manner and changes often made without prior notice to production department which sometimes cause unnecessary stocked products.

➤ **Inventory Record Accuracy**

10. INVENTORY RECORD ACCURACY	SCORE
Inventory control process in place that provides accurate storage	

location and work-in-process inventory data.	Very Good (3)
10.a. Cycle counting is done on a daily (minimum weekly) basis.	
10.b. Cycle count results shows sustained inventory record accuracy to be 95%-100%	

The item of this checklist is addressed to Managers, Supervisor/Power User of Production, Warehousing, Purchasing, Planning and Export departments. Results derive from interview and ERP system record.

10.a. Inventory cycle of material and finished goods is done on a daily basis and accuracy is controlled and maintained. Physical counting is also effected to match with record in the system. The system shows defined production storage location of product issue, raw material, sub material and external material/planned delivery. System also displays finished goods storage locations: warehouse, container yard, production, blocked rework or products need to be reworked (due to poor quality) and external warehouse. Each storage location code is defined automatically by the system.

10.b. Cycle count results are accurate because all records of stored material, goods in process and finished goods within defined storage location is displayed in the system. Material consumption list updates material inventory stocks at the same time while sales and delivery updates automatically the finished goods inventory.

10.c. Respondents subject to fill the checklist item agree to score 'very good' score (point is 3). The fact that Planning and Export department do backdates (finished goods are still in Container Yard storage location but claimed to be shipped already).

➤ **Bill of Material Structure and Accuracy**

11. BILL OF MATERIAL STRUCTURE AND ACCURACY	SCORE
<p>The planning and con troll process is supported by a properly structured, accurate, and integrated set of bills of material.</p> <p>11.a. Records show bills of material to be 98-100% accurate.</p> <p>11.b. Finance uses the bill of material in costing product.</p> <p>11.c. Company uses the bills of material to plan and control materials.</p>	<p>Fair (2)</p>

The item of this checklist is filled by Managers, Supervisor of Production and Planning and Export departments. Results derive from interview and ERP system record.

11.a. Records of bills of material shows accuracy between 60 -75%. Accuracy is hardly to achieve due to products are made through fermentation process. Product results heavily depend on environmental factors such as cleanliness and characteristics of the bio-molecule itself. Records of Bills of material can be viewed in attachment 21 – 24.

11.b. Finance uses bills of material to estimate product cost and profit.

11.c. Company does not use the bills of material to plan and control materials because its accuracy is quite low. Material planning and control is developed based on material consumption.

11.d. Considering the records of bills of material accuracy, respondents score bill of material structure and accuracy as fair (point is 2).

➤ **Distribution Resource Planning**

12. DISTRIBUTION RESOURCES PLANNING	SCORE
12.a. The distribution network (storage location) and item stocked is displayed in the system.	Very Good (3)
12.b. System provides shipping schedules.	

The item of this checklist is filled by Managers, Supervisor/Power User of Warehousing, Planning and Export departments. Results derive from interview and ERP system record.

12.a. ERP system displays storage location and each material or products stocked.

12.b. ERP system displays shipping schedules and all information related to customer order and characteristics of shipped goods.

12.c. Score of Distribution Resource Planning is 3 (very good). This score is given through the fact that backdates are sometimes done to meet sales target which makes inventory of finished goods is not 100% accurate.

Work Location Record Accuracy

13. WORK LOCATION RECORD ACCURACY	SCORE
Record shows the work location database to be 95-100% accurate	Very Good (3)

Work location record accuracy is considered to be very good by all respondents considering that ERP system assigns automatically each product or material based on plant and company code number. Error entry of plant or company code will be blocked by the system automatically.

➤ Checklist Results Calculation

According to the above mentioned results, the average numerical scores for the reviewed items are as below:

- Total scores of overview items = 37
- Average scores of overview items = $37/14 = 2.64$
- The result reveals below characteristics:
 - According to the ABCD checklist rating, business process of planning and control within PT. XYZ is classified as Class B.
 - This level defined qualitative characteristics that the processes of planning and control system are supported by top management and used by middle management to achieve measurable company improvements. This title reflects a gap between achieved performance against best practices offered by the system.
 - Results of ABCD checklist and interview indicate the fact that ERP system is enterprise-widely used but the best practices are not achieved yet. Observation reveals that there is still a gap of business process performance against best practices. This leads to a requirement that all users should work more closely to the system environment to attain

potential benefits of ERP implementation, that is, access for all users to more reliable and real time information in order to support planning and controlling processes within Planning and Export, Purchasing, Finance, Accounting, Production, and Warehousing areas.

A.4. People, Process and System Integration

The planning and control along with people/team process scores related to ERP system application can be calculated as follows:

- Scores of Planning and Control process = 37
- Scores of People/Team process = 8
- Total scores of overview items = 45
- Average scores of overview items = $45/18 = 2.50$
- The results of above calculation have following meaning:

- The average scores entitled PT. XYZ Indonesia as a class B user.
- According to Wallace (2001: 17-18), a class B user has a characteristic that the ERP system implementation is supported by top management; used by middle management to achieve measurable quality improvements.
- According to Hamilton (2003: 48), a class B user has a characteristic where the formal ERP system is partially effective in being used to run the entire company. It defines Sales and Operations Planning (S&OP) game plans, but they typically lack company-wide agreement and completeness. Supply chain activities are frequently initiated that do not reflect schedules from the

ERP system and the volume of action messages frequently makes them difficult to use. Unrealistic delivery promises on many sales orders contribute to the problem, and also create a larger-than-necessary volume of exception conditions requiring expediting. Some informal and/or parallel systems are employed to manage expediting outside the formal system. While the manufacturing database provides a reasonably complete and accurate model of how products are really built, there are just enough exceptions to make some people question the formal system. The accounting applications are closely coupled to operational reporting, but sufficient exceptions exist to make some financial impacts suspect.

- The title of class B users can be viewed through the facts that many employees still use traditional practices such as phone-call and spreadsheets utilization instead of relying on the ERP systems track records to gain required information.
- The checklist result also reveals indication of lack of training and education within people and team process. Lack of knowledge about ERP system utilization results in inability to exploit the system's benefits.

Assessment of ERP system application in PT. XYZ reveals a gap between current performances against best practice. However, its implementation has significant affects on the business processes and day-to-day operations. Some benefits are eventually recognized in supply chain performance of PT. XYZ Indonesia.

B. Impacts of ERP System Implementation

The capabilities of ERP system enhance PT. XYZ Indonesia's ability in terms of speed and responsiveness to manage its supply chain activities. The impacts of ERP system on overall company performance can be described through capability of internal functions/departments of PT. XYZ Indonesia to devise a consistent plan for

action. Impacts of ERP system application includes following, but not limited to, benefits within the functions of accounting, product and process design, production and material management, customer service and sales.

Refer to Hamilton theory (2003: 42-44), the impacts of ERP system implementation at PT. XYZ Indonesia can be pointed out through following descriptive effects:

1. Effects on Accounting

ERP system provides complete and accurate information related to account payables and account receivables enabling finance projection on cash planning and decision making process. Records of planned purchase receipt enables accounting to trace detail purchased item for account inquiries. Accounting can rely on ERP system capability to harness planned purchase receipt through two-way operation: purchasing expense pending (goods received without supplier's invoice) and material in transit (supplier's invoice available but goods are still in transit). Both operations enable finance to plan cash for payables purposes.

In term of receivables, as customer invoices made based on shipment date, double entry on planned receivables is no longer necessary, thus speeds invoice processing. By this means, finance can predict cash receipt for financing operational purposes, such as purchasing payment planning.

2. Effects on Product and Process Design

Bills of materials configuration in ERP system can reveal the changes of material and resources consumptions. Usage of excessive material and resources can be immediately recognized leads to ability to develop improvement action. As information on changes can be easily accessed in the ERP system, emergency action can be communicated in a timely manner. ERP system also provides ability to production or engineering department to check where-used information to identify the affected products and focus on production process improvement.

3. Effects on Production and Material Management

ERP system provides easy access about planned deliveries enabling production department to make product based on orders. Respectively, when production department encountered problems due to material shortage, marketing and purchasing department are immediately notified for rescheduling and material procurement initiatives.

ERP system defines storage location for each process, thus, enhances production and purchasing department's ability to detect current material inventory status. Also, real-time information available in the ERP system provides clear guideline for purchasing departments to control material availability and for production to make production planning and priorities.

4. Effects on Sales and Customer Service

Export progress status within ERP system enables customer service function to responds immediately in regards with delivery status such as shipment schedule, quantity and product characteristics. Furthermore, as ERP system provides inventory status, customer service function can use the record to establish delivery planning.

ERP system is typically capable to leverage supply chain management performance through to its abilities of providing real time and accurate information for users, thus eliminates information asymmetries. As ERP system is company-widely used in PT. XYZ Indonesia, same reference number such as Sales Order and Purchasing Order can be quoted to gain necessary information which result in efficient communication and better coordination between internal supply chain stages of PT. XYZ Indonesia.

C. Cultural Background within ERP System Environment of PT. XYZ Indonesia

Davenport (1999: 2-4) and Handfield (2002:92) pointed out the role and impact of personnel and organization culture within system environment. The gap between best practices and current performance related to people process within PT. XYZ Indonesia indicates following findings:

- **Lack of education and training**

ABCD checklist of People/Team Process and interview results reveal the facts that education and training are not regularly developed in all areas implementing ERP system within PT. XYZ Indonesia: production, warehousing, accounting, finance, marketing and purchasing. Formal education and training are carried out from time to time and regarded as occasional events. Furthermore, although education and training are recorded as part of human resources development programs, they are not used for employee's assessments.

The education and training related to ERP system was developed as a part of system implementation project and none on-going training/education on ERP system application and utilization is established afterwards.

- **Lack of communication and information-sharing**

Assessment in People/Team process as well as interview results reveal that formal meetings and informal meetings state-of-the-business are regularly carried out at the plant side. The results can be viewed through employees' ability to articulate well the objective of their work and function. Whereas survey conducted in supporting team such as marketing, purchasing and accounting revealed lack of knowledge about the goals of department and company. Consequently, employees of these departments perform day-to-day operation without clear guideline resulting in unawareness of the importance of their role and responsibility as well the impacts to other departments. This condition results in incapability for employees to share the common goal of their functions and company.

Survey also indicates that issue of role and responsibility within ERP system environment has prevented employee to access to certain information results in the need of second options of communication to perform day-to-day operation. Other ways of communication are typically developed through emergency phone-calls, usage of extracted spreadsheets (e.g. delivery and production table plan) and additional work orders (e.g. material payment and overhead costs proposal) in day-to-day operations. The role and responsibility reflects a rigid information-sharing culture.

- **Lack of monitoring and control process**

Survey and interview results reveal that lack of monitoring and control system incur within the area of account receivables. Lead time between negotiating date and payment receipt is being monitored but is not well controlled. Consequently, Finance department is still facing problem of providing cash payment due to inability to control account receivables.

Lack of training, communication and information-sharing, monitoring and control system are existing hurdles that typically encountered within ERP system environment in PT. XYZ Indonesia which eventually results in failure to a properly implement ERP system in order to achieve best practices.