

## **HUMAN VALUE ECOSYSTEM: PRODUCTIVITY MANAGEMENT IN A HUMAN WAY**

**Leow Chee Seng** 

Graduate School of IIC University of Technology, Cambodia

drleowcs@iic.edu.kh

**Saiful A. Jalun**

University Putra Malaysia, Faculty of Modern Language and Communication, Malaysia

saifuljalun@gmail.com

**Leong Wing Sum, Vincent**

IIC University of Technology, Cambodia

vincent@hbademy.org.uk

**Marimuthu Nadason**

IIC University of Technology, Cambodia

marimuthu@eraconsumer.org

**Bunna Yea**

Department of Small Medium Enterprise and Handicraft, Cambodia

bunnayea@gmail.com

## Abstract

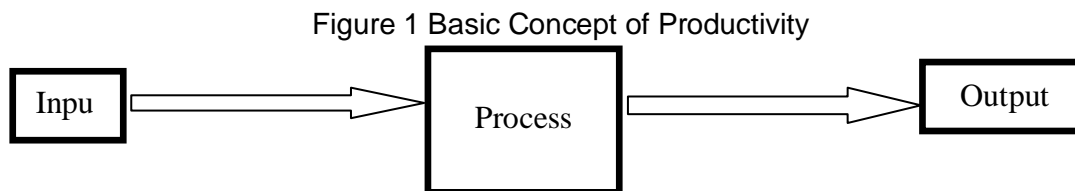
*Productivity is a very central and pertinent issue in any business globally. Thus, an analysis was conducted to study the developmental issues, measurement and the strategies of productivity. Various methods of analysis were introduced to analyse and have the deep understanding of the current issues of productivity. From the analysis, the concept of productivity shifts from the basic to the new paradigm of productivity that focuses on humans. Human Values Ecosystem (HVE) was introduced to cover both the macro and micro levels of productivity among SMEs in Asia. The analysis should compel organization through the basic concept and philosophy, to the importance of moving forward with the new productivity paradigm that will boosts the organization performance.*

*Keywords: Productivity, Human Potential, Leadership, Business Excellence, Happiness, Talent Management*

## INTRODUCTION

### Traditional Concept of Productivity

The concept of productivity has been a concern for both academicians and practitioners (Grönroos, Ojasalo, 2004). Various literatures have posited that the concept of productivity is only applicable to manufacturing industries and it is hard to be applied in the service sectors (Mansfield, 1980; Bolwijn, 1990; Fernandes, 2007). Most literature also only relates the concept of productivity with input and the output (Caves, Christensen, Diewert, 1982; Wolff, 1994; Ball, 1985; Chambers, 2002;). It is also understood that the concept of productivity is in all actuality, a measure of how well resources are allocated and used to accomplish desired output (Arndt, Dalrymple, Ruttan, 1977; Barnett et al., 2014).



According to Tangen (2002) the definition of productivity can be sub-categorized into three parts. They are:

- i. use the less input and remain the same number of output
- ii. use the same input but produce more output
- iii. more effectively less input with more output.

This traditional concept is hard to justify when the factory produces more than one products (Fotsch, 1984). The value of output is also difficult to measure when the products or output make up are different. In addition, inflation complicates the measurement when we compare the phenomenon across time (Dotsey, King, Wolman, 2013).

Fox and Smeets (2011) posited that the determination of input is more challenging because it is very difficult to associate it with productivity ratio. In a manufacturing plant for example, the input includes raw materials, energy, human capitals, overheads and other variables (Brandt, Van Biese broeck, Zhang, 2012). These factors constantly overlap with each other. As a result, different approaches have to be developed to operationalize the definition of productivity and its measurement to cater for the many influential variables.

### **A system view of productivity**

According to the system view, organization is viewed as the resource transformation system (Edward, 2010). The resources such as human potentials, money, energy and information are converted as products or services. In this approach, the input can be stored in the system when the process in the pipeline delays. Hence, efficiency is measured with the ratio of output to the input.

However, Kivinen, Hedman, Kaipainen, (2013) describes that the system view of productivity does not solve the problem in identification of output and input. In addition, this approach has the highest challenge especially in terms of efficiency which arises from the possible time lags involved in the system. Usually, industries would evaluate both efficiency and effectiveness to identify the result. In the system approach, effectiveness is defined as a measure of how successful the system is in achieving the objectives (Kettner, Moroney, Martin, 2012). Thus, it is just not output or input but how they fare against predetermined objectives.

Fiordelisi, Marques-Ibanez, Molyneux (2011) posited that when a business is efficient but ineffective, the system is highly affected and mostly in the negative manner. Unfortunately, a lot of organizations fail to evaluate their effectiveness and efficiency as a whole based on the target objectives. The company risk various problems and issues when the organization kept improving the efficiency but is still maintaining an ineffective system (Loudermilk et al., 2014). The attempts to improve the efficiency of an ineffective system may be a recipe for disaster since the system may continue to do the wrong things, but in a faster mode..Thus, it is imperative to consider an evaluation that takes into account both effectiveness of productivity as well as the system efficiency.

Chilingirian and Sherman (2011) defines efficiency as the concept of doing the things right and effectiveness as the concept of doing the right things. In productivity, Cummins and

Weiss (2013) define efficiency as the relationship between the results achieved and the resources used. Admittedly, it is rarely possible to describe these variables in absolute terms. Nonetheless, we could start with the acceptance that one process is 'more efficient' than another if it achieves the same outcomes at lower cost. A process can be deem as effective if its outcomes match the stated goals or objectives. This realization can thus forward the notion that effectiveness is therefore similar to 'quality'.

### **The Economists' Approach to National Productivity**

Total factor productivity is generally viewed in two aspects which are respectively labour productivity and capital productivity (Van Beveren, 2012). Labour productivity is measured as Gross Domestic Product per economically active individual. Capital productivity refers to output per unit of value of fixed production assets (fixed capital).

Dias Avila and Evenson (2010) stresses that there are several economics limitations when measuring both factors. This is mainly due to the fact that in practice, the process is more of an estimation rather than measurement. The accuracy of the "estimates" is often open to questions. Lovell and Grifell-Tatjé (2014) added that economists are more keen to measure productivity estimations for a manufacturing industry rather than the service and public sectors.

### **Attitude towards Productivity**

Still apparent today, the understanding of productivity remains at dim and blurry.(Tangen, 2002). Understanding of productivity matters was poor to begin with and views on productivity measurement have been uncharacteristically unsophisticated. Pilat (1996) mentioned that the productivity misguided focus on labour productivity to the the point that all other factors, with potential important ones, excluded.

Recently, more researches are focused on the comparisons attempted between individual sectors and countries. This contributes to a clearer definition of productivity (Balk and Netherlands, 2010; Gholizadeh, 2014; Pretzsch, 2010). Now, researchers understand that the productivity model and productivity measurement are not as straightforward as previously thought (Blackburn, Brennan and Ruggiero, 2014).George (2014) reported that the measurement of productivity does not only focus on the technology, knowledge management. Managers must be made to realize that productivity management is not as simple as managing technology and knowledge but also people factors that will also come importantly into the picture in the new paradigm of productivity.

It is worth noting that Dotsey, King, and Wolman (2013) posited that when inflation becomes one of the global issues, it was indirectly related to the matter of productivity.

Indirectly, inflation productivity becomes the spotlight and productivity bargains become popular. This may provoke focus upon a particular partial productivity measure to the detriment of overall productivity. The attitude towards productivity reaches critical and danger stage when an organisation focuses on the quantitative measures of productivity and ignore the others. Perhaps, the more important elements to review in the area of productivity include quality and effectiveness or as we have said earlier the whole sum of the game.

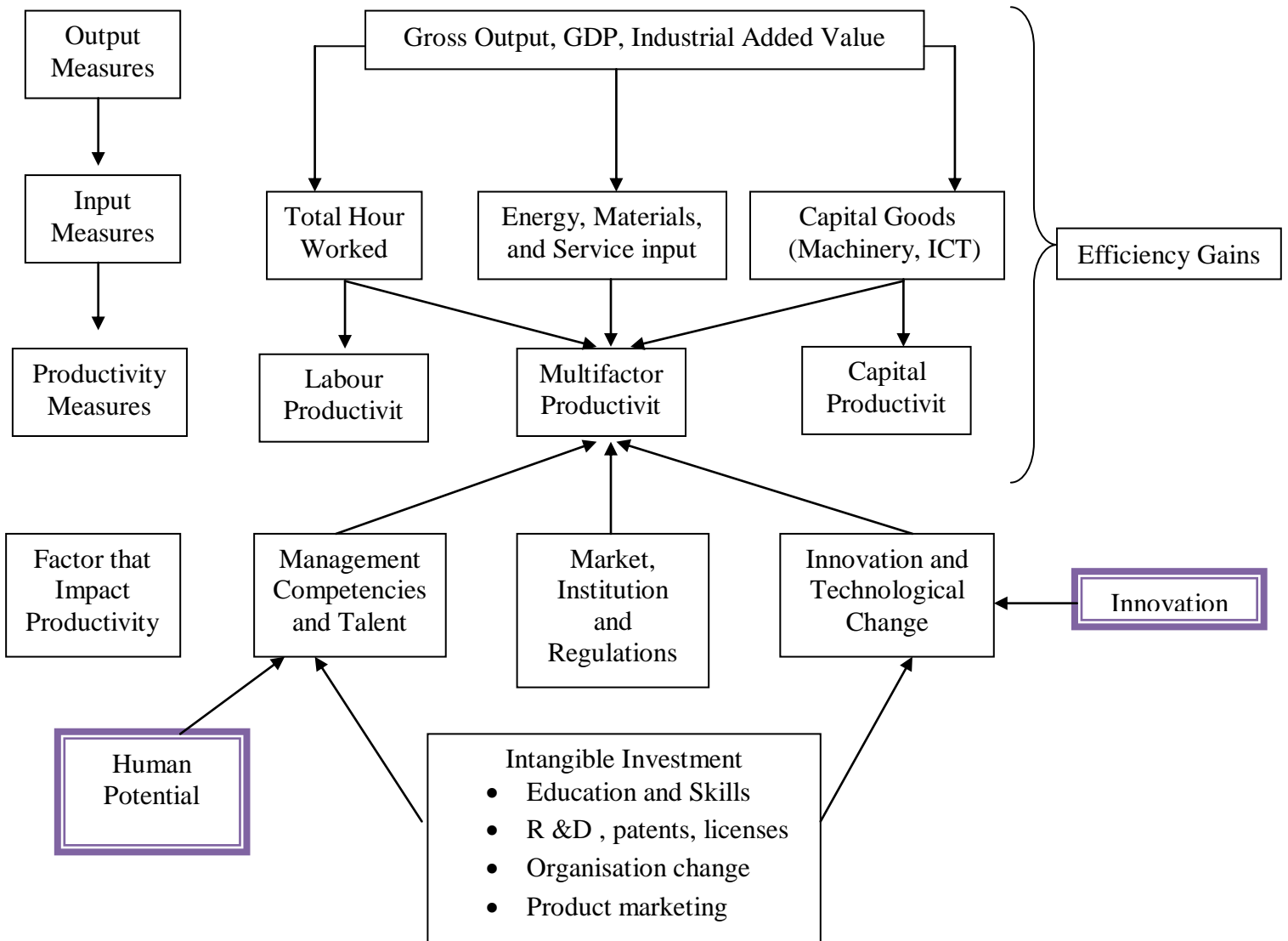
### **Productivity Measures proliferated**

Based on Jorgenson and Schreyer (2013) national productivity measurement, the output measures include gross output, gross domestic product or industrial value added. For input measures, total hours worked (skills, gender, age); energy, materials, and service inputs and capital goods (machinery, infrastructure and information technology) should be calculated and included (Bagger, Christensen and Mortensen, 2014).

Syverson (2010) added, the productivity measures include labour productivity and capital productivity. However, all three input measures are integrated into multifactor productivity (Diewert and Yu, 2012). Labour productivity is an easy measure to obtain; proxies contribution to living standards. The unit labour cost, and provides link to wage setting process (Stachowiak, 2011). However, Gupta et al. (2014) reported that capital productivity is related to efficiency of utilization of capital. Multifactor productivity is a proxy for analyzing the efficient use of all input resources and growth impact from technology and innovation.

Balwin (2014) summarized that in the multifactor productivity measures, there are several factors that impact productivity which includes innovation and technology change, management competencies and talent, market, institutions and regulation. The intangible investments influence both innovation and technological change and also management competencies and talent. Measurement of intangible investments includes education and skills; research and development, patents, licenses, organizational change and product marketing (Harper et al., 2013).

Figure 2: Figure Macroeconomic productivity measures in OECD



Source: <http://www.oecd.org/dataoecd/59/29/2352458.pdf>

The proliferated productivity measures are actually supported by the global challenge index 2012 and 2013 where human capital and innovation still remain at the top challenges for global business (Ark, 2013). From this global scenario, there is a need to further your understanding to enhance human value ecosystem that addresses both innovation and human potential (Kathuria, Raj and Sen, 2013).

Ark (2013) proposed several steps are proposed in boosting global productivity that includes:

- Increase efforts to retain critical talent
- Improve performance management process and accountability
- Provide employee training and development
- Improve succession planning for current and future study
- Enhance effectiveness of the senior management team

From the proposal, there are understandable needs to move forward the future trend of productivity.

### **New Wave Productivity: From Peripheral to Centre**

Before venturing into the new wave productivity, it is interesting to understand some myths of productivity. Myths need be neither true nor false but are somewhat just useful frictions to understand or gauge situations. Fase and Tieman (2000), Charpentier (2014) reported the productivity myths which includes

- Direct labour costs can be reduced by increasing productivity.
- The bottom line is all that counts.
- Offshore is able to reduce production price
- Maximise machine utilisation to increase productivity
- Productivity can be increased with low cost manufacturing
- Productivity can be boost by locating manufacturing plant where there is low cost labour.
- The issue of automate or emigrate affects productivity level.
- Reducing material move distance does not improve productivity in an automated plant.

There is a huge paradigm shift of business environment that contribute to the change of worldview of productivity. According to Lench (2012), the changes include globalisation and digitalisation that creates non boundary business environment. Doing business is no longer focused on one specific location. In addition, Leow, Samsinar and Vincent (2014) identified that customer expectation shifts when the lifestyle, socioeconomic status shift..

In manufacturing, Kotha (1996) observed the production starts to shift from mass production to mass customization to serve the needs and wants of the customers. Furthermore, there is a change of business perceived role from selling to caring (Leow, Samsinar and Vincent, 2014). Customers want to be connected, involvement, transparency, empowerment. They added customer is no longer categorised as consumer to business to customer (B2C) or business to business (B2B) but it is known as human to human business (H2H). These entire paradigm shifts compels us to view the concept of productivity in different perspectives.

Table 1: Paradigm Shift: Old Productivity Paradigm to New Wave Productivity

Old Productivity Paradigm	New Wave Productivity	Old Productivity Paradigm	New Wave Productivity
Better is better	Small is beautiful	Centralise	Decentralise
Complicate	Simplify	Delegate	Flatten the organisation
Functional specialism	Product team	Measure productivity	Improve productivity
High machine utilisation	Excess capacity	Problem solving	Strategic planning
Batch system	Continuous system	Keep people busy	Keep material missing
Multiple checkpoints	Right first time	Inventory as an asset	Inventory as a sunk cost
Short-term profits	Long-term profits	Boss power	People power
Fraction defectives	Zero defects	Emphasis on money	Emphasis on time
Company goal oriented performance measures	Customer satisfaction measures	Command management	Participative management
Large-scale process	Small-scale process	Incremental productivity	Quantum productivity
Increases	Improvements	Specialist labour	Cross-trained operators
High WIP (Work in Progress)	Linked operations	Get the Facts	Get started
Quarterly profit driven	Strategic driven	Many job rates	Few job rates
Long factory lead times	Real time manufacturing	Cost reduction	Accelerated added value
Threaten supplier	Certify vendors	Input oriented	Output oriented
Trend analysis	Paradigm shifts	Export employment	Retain innovation
Chase cheap labour	Nurture labour	Stock prices	Competitive advantage
Control complex system	Simplify systems	Cost justify	Strategic investments
Economies of scale	Economic of scope	Deductive logic	Creative thinking
Complex control	Simplify, Kanban	High work measurement coverage = high productivity	Kaizen – improve a little everyday

Source: Leow, Samsinar and Vincent, 2014

The paradigm shift is a change to a new set of rules. Table 1 describes a list of old rules and new rules that are receiving current attention. However, the old rules are still entrenched in the current business context as they are firmly held by many in powers that be in established industries. They are sometimes assumed under the level of honoured national traditions or culture whereas they are in reality barriers to effective change.

### Get Ready for Paradigm Shift

Due to chaotic business environment and speed business environment change, knowledge management and technology is adequate to move towards high productivity nation. There is a need for new wave productivity paradigms and thus paradigm shifters. The paradigm shifters should equip themselves with the following attributes:

- They will be always thinking out of box.
- They will be intolerant of the existing suffocating rules
- They cannot tolerant with progress blockers, either people, positions or rules



- They only invest in new development
- They have nothing to justify for any changes
- They will embrace talent rather than protect losers

Remember that paradigm shifters are the pioneers. They must always have high courages, and decisiveness that may even been seen as less curt or cordial to the established firm of powers.. It is not easy to be paradigm shifters because the transformation process is full with challenges and uncertainties. To be a paradigm shifter, the person should feel unsettled when they stir things up and resist the obvious provided evidence so that they could be able to transform the organisation from the old productivity paradigm to the new wave productivity paradigm.

### **HUMAN VALUE ECOSYSTEM AS NEW PARADIGM OF PRODUCTIVITY**

Productivity and innovation are a global concerns especially when a nation wants to escape from middle income trap. Management's awareness of productivity issues has undergone various phases (Sheth and Sisodia, 2002) And these leads to productivity centres to be globally established to promote management's understanding of productivity matters. These centres have done much to bring productivity issues to the fore.

Box (1999) views the point that government play the role to perform business activities. With privatisation, the role of government was shifted to make the business community to play the role to perform business activities and hopefully social ones too. Humans are and should be the designated decision makers in the business community (Bel, Hebdon and Warner, 2007). As a result, the decision that is done by the business community today decides the future outcome specially the organisation productivity.

Currently, different organisation focuses on different approaches to increase productivity. Organisations thus, invest in the technology, research and development to boost the productivity (Masikati et al., 2014; Basker, 2011; Kamijo, 2013). They believe that by using latest technology, they could increase their productivity. However, Chen, Li and Shapiro (2011) identified some companies that focus in developing good corporate strategies such as key performance indicators and corporate governance guidance to increase the success rate. Chattopadhyay (2001), Corbett (2002) and McAdam (1999) reported that many organisations put organisational process as the key of success by getting different International Organisational Standardization (ISO) with the objective to boost the organisation productivity and hence success. Again we are at the juncture to balance the needs between technological or equipment enhancement and/or human productivity ratio. Additionally, there is another type of companies

that focus on knowledge management in order to move the company to the next stage(Serenko and Bontis, 2004;Hislop, 2013; Tsirikas, Katsaros and Nicolaidis, 2012).

It is accepted thatall these steps such as technology, knowledge management, standard operation procedureds and corporate strategies are able to boost the organisation productivity. However, the most essential elements that contribute to the organisation growth and productivity Is still humans as they are the holders to the main key of enhanced productivity; creativity and innovation.

### The Triumvirate Human Values Ecosystem Framework

Figure 3 Human Values Ecosystem Model



This model covers two levels of human potential productivity, the individual and the corporate level. The interconnected between organizational and individual level is described with the concept of oneness (Garfield et al., 2014). Whyte (2013) justify that the ultimate goal of human being is the connectivity point both individual and organizational level in term of happiness.

For individual level, happiness is the ideal human values that employees hope to achieve (Park et al., 2011; Hsiao, Huan, and Woodside, 2013; Do Paco, Nave, 2013; Lin, 2014; Rego, Ribeiro and Jesuino, 2011). There are many factors contribute to happiness. According to various psychological theories, self-actualization and self realization is the main contributor of human happiness (Liu and Han, 2013).

Turning to reflection values, in order to achieve intentional values – self actualization and self realization can be fulfilled when we focus on human development (Raibley, 2012; Warr, 2011) and holistic human approach (Mandel and Eng, 2012).

Holistic human approach can be explained with Carl Jung theory that focuses on body, mind and spirit (Jung, 2009). In human productivity model, body is described as physically, mind is described by mentally and emotionally in human value ecosystem model. According to Hu and Li (2006), spiritual element is still important that contributes to human potential productivity. Human development contributes to self actualization and self realization directly. In order to achieve human development, human should be given opportunity and involvement to development themselves (Heckscher, 1988; Yang and Konrad, 2011; Pendleton and Robinson, 2010). In addition, Nadiri and Tanova (2010), Whiteman (2012) found that fairness and justice are main component of human development that contributes to productivity. Freedom is also directly contributes to the human development directly and become the focus of human value ecosystem (Manson, 2014). When the individual level productivity level is achieved, the healthy workplace is promoted through talent and healthy talent ecosystem (Fullagar and Kelloway, 2012).

When an individual is happy and delighted, the inner happiness is actually encouraged individual to be more creative in problem solving (Zenasni and Lubart, 2011; De Neve, 2013; Bledow, Rosing and Frese, 2013). According to Johnston and Bate (2013), new innovation could be evolved when a person kept on trying based on their own interest and preference to solve a problem.

In fact, this innovation and creativity could directly create opportunity in the niche area through operation excellence (Kloet et al., 2013). In addition, the scientist could also help to improve the strategy, the procedure through various methods such as KAIZEN Management (Bhandary, Ramachandran and Betageri, 2012; Neagoe and Klein, 2009; Singh and Singh, 2009), LEAN Management (Romm, 1994; Knight and Haslam, 2010; Clark, Silvester and

Knowles, 2013) and other business excellence method (Asif et al, 2011; Lu, Betts and Croom, 2011; Vora, 2013). All these contribute to the increase of productivity.

When a business productivity enhancement is achieved, the organization enjoys both return in labour and also return in capital. At the same time, the organization increases the level of profitability through return of investment.

Tashakov (2014) reported that when the organization achieves return of investment (ROI), they could have the possibility to invest in more research and development or even pump in new investment for the new project to increase the quality of the product. With return in capital, new investment and research and development, new job is created (Ianchovichina et al., 2013).

When new job is created, quality of life (Holistic human approach) and also more opportunity in life (Human development) are improved and upgraded. The cycle continues to maintain the homeostasis to create the harmony in boost up the human value ecosystem as a holistic concept. However, the whole strategies would not be successful without the driver, leadership.

### **Human value ecosystem Improvement Techniques: Understanding the Soul of Productivity**

The success of productivity improvement does not depend on the techniques applied but the commitment and the creativity of stakeholders play a more important role (Lapointe, Mignerat and Vedel, 2011). Even the productivity techniques does not play the main role, we cannot ignore the contribution of those techniques because those techniques assist agents in the process, a part of the overall approach.

Organisation strategies are the fundamental to ensure the success of productivity improvement. Blinder (2011) identified the common mistakes include internal staffs for transformation process in order to boost the productivity; some companies would appoint external management consultant to help in improving productivities. Both strategies are wrong because ideally productivity improvement should be provided by productivity specialists for deployment by the operational staff and work groups. Similar, Wright, Sturdy, and Wylie (2012) argued that external consultants would not be able to understand the operation well and the organization should fully involve all members of the organization, not only the managers. These groups of productivity specialist group must be recognized by the company and should be new title “productivity support” or “productivity services officers” to support their new role (Tsai et al., 2011).

The basic approaches the productivity specialists apply should be harnessed together with intuitive creative approach that can be obtained through motivation and enthusing of the workforce. The attitude towards productivity is more important than the productivity (Imran et al., 2014). All these techniques need the ability to question in a systematic manner, all aspects of a particular situation, process or procedure. In most cases, we apply 5W and 1H technique as the fundamental questions of productivity improvement.

Table 2: Primary and Secondary Level of Questions of Productivity Improvement

Primary Level	
Think	What are you trying to achieve?
Justify	Why are you trying to achieve it? What are the benefits?
Method	How might we set about achieving it? What alternative approaches exist? How do we evaluate alternatives?
Secondary Level	
People	Who is responsible for a given objective?
Time	When will the objective be achieved?
Location	Where will activity in support of a given objective take place?

There are eight different productivity techniques in human value ecosystem framework. These include value analysis, Pareto analysis, family tree analysis, cause and effect diagram, method study, cost/benefit analysis, work measurement and non-work measurement.

## VALUE ANALYSIS

Value analysis focuses on the material analysis more general productivity improvement programme. The concept of a “supplier” chain in more sophisticated usage, encompasses the concepts of usage value and esteem value, recognizing that the total value attributed to an article is composite of its functionality and any additional perceived value. The technique addresses each material, component part and immediate part of an article to question if the cost of the part is commensurate with the value it adds to the finished products.

The general objectives of the material review is to establish standardization of materials to reduce purchasing cost, by taking advantage of economies of scale and stock-holding costs.

Standardization offered by a non-standard material or component is greater than its additional cost that becomes a argument of value analysis.

During value analysis, training to the workforce can illustrate the general approach or where they are identified as having specific applicability within the environment of the particular organization. This approach helps to discover more about the nature of a situation so that organization can identify beneficial changes, but it is important to concentrate on the situation or problems.

To sum up, value analysis helps to find out what is currently happening, to examine potential solution/changes, and to evaluate those potential solution / changes according to defined criteria of success.

## **PARETO ANALYSIS**

Pareto analysis is applied when we want to identify priorities. Pareto Analysis applies "80/20 Rule" – which is the idea that 20 percent of causes generate 80 percent of results. With this tool, we're trying to find the 20 percent of work that will generate 80 percent of the results that doing all of the work would deliver. The results are finally presented through graphical method. The following are steps you can follow:

1. Identify and List problems
  - a. Everyone in the organization needs to be involved in these steps in order to obtain comprehensive problems in the organization.
2. Identify the Root Cause of Each Problem
  - a. Organsation can use technique such as brainstorming, 5 Whys, cause and effect analysis, root cause analysis to complete this task.
3. Score Problem.
  - a. This method depends on the sort of problems. For example, you are interested to improve customer satisfaction; you need to number of complaints eliminated by solving the problem.
4. Group Problems Together By Root Cause
5. Add up Scores for Each Group
  - a. The highest score is the top priority.
6. Take Action
  - a. Low scoring problems should be put least priority and it depends on the cost benefit.

## FAMILY TREE ANALYSIS

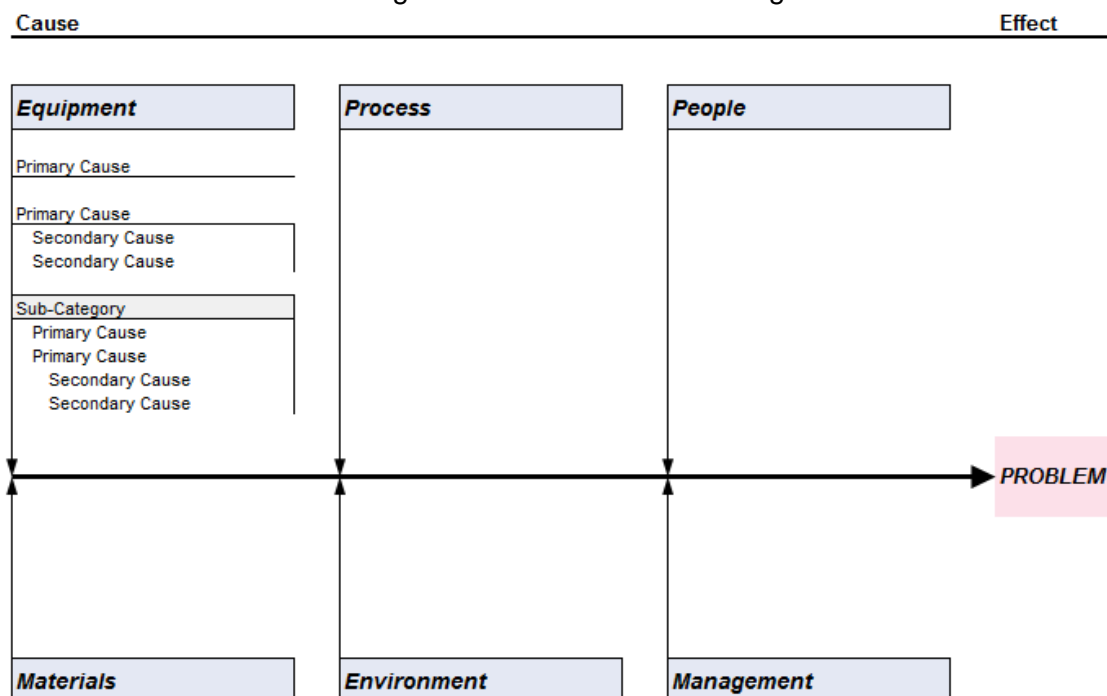
Family tree analysis starts from the existing situation or problem and improvement they desired. The basic question what to achieve is written in the centre of a sheet of paper and a simple tree structure created above and below it. The branches of the tree are written questions that must be answered to tackled if the basic problem, as detailed within the central question is ignored. On the branch below the basic question are written the questions that must be asked or tackled in order to make progress towards answering the basic question. These include, “How can we reduce....”; “How can we improve.....”; “How can we ensure .....”. When conducting family tree analysis, we need to continue to ask questions to build up a tree structure.

## CAUSE AND EFFECT DIAGRAM

This is known as fishbone diagram or Ishikawa Diagram. The fishbone has an ancillary benefit as well. Because people by nature often like to get right to determining what to do about a problem, this can help bring out a more thorough exploration of the issues behind the problem – which will lead to a more robust solution.

To construct a fishbone, start with stating the problem in the form of a question, such as “Why is the help desk’s abandon rate so high?” Framing it as a “why” question will help in brainstorming, as each root cause idea should answer the question. The team should agree on the statement of the problem and then place this question in a box at the “head” of the fishbone.

Figure 2: Cause and Effect Diagram



With the family tree diagram, after two or three levels have been discussed and charted, discussion moves to consideration of probabilities of cause and probabilities of improvement if the sub-factor is addressed.

## **METHOD STUDY**

This is the systematic recording and critical examination of existing and proposed ways of doing work by applying effective methods and reducing costs. The procedure includes

- Select the situation or problem to be examined
- Define that situation or problem.
- Record relevant data about it
- Examine the recorded data
- Develop fresh ideas and approaches
- Install a new working arrangement, process or procedure.
- Maintain that new arrangement as standard practice.

Practitioners who have undergone method study training tend to spend a disproportionate time on the record stage of the procedure, since there is a great range of recording techniques available. The recording techniques include flow charts, travel charts, multiple activity charts, string diagrams and others. The basic charting and diagrammatic techniques serve as communication devices. Analytical and quantitative techniques could be used to provide a factual basis for management process.

## **COST/ BENEFIT ANALYSIS**

This method is always overlooked by management when evaluating productivity. Management should evaluate the benefits and various advantages accruing from the project as compared to the cost that is involved when implementing the changes. The main concerns include, the benefit that will accrue; the probability of success; and any side-effects. Then, simple ranking systems are used with weighting attached to different factors in more complicated versions. The evaluation should be in numerical method because management always perceives numbers carry more weight than words.

## **WORK AND NON-WORK MEASUREMENT**

Work measurement helps us to identify the task completion time, workload and capacities at workplace. Unfortunately, work measure is evaluated with payment system and individual performance. When incorporated into productivity measurement program, it is employed with



sensitivity to assist in their own determination and evaluation of alternative working patterns and procedures. The work team should play the role as supportive rather than damaging agent. Creativity and innovation should be done to create less threatening system that aimed at individual measurement.

Non-work refers to time that is not occupied by the organization to produce work results. For example, an organization spends 10 hours to manufacture but take 100 hours to progress from order to delivery. The rest of the time (the non-work time) is taken up in the form of (temporary) storage. To have the complete holistic measurement of work productivity, undertake measurement of not only the work content of jobs, but also the overall throughput times and to measure one as a percentage of the other. The size of the resulting figures may offer strong motivation for improvement.

### **INTEGRATED MANAGEMENT OF PRODUCTIVITY ACTIVITIES (IMPACT)**

After understanding the basic technique of productivity measures, integrated management productivity activities (IMPACT) provide the methodology how to achieve long-term competitiveness and profitability of organizations (Teng, 2014). This model is adopted from SPRING, Singapore. In order to integrate human value ecosystem into Integrated Management of Productivity Activities (IMPACT), the following framework is produced.

Table 3: IMPACT Framework in Human Potential Productivity

Impact Framework	Uses of Measures in Human Potential Productivity
<b>PHASE I</b> Establish Productivity Management Function	Set Goals and Create Awareness <ul style="list-style-type: none"> <li>• Set Productivity goals for the organization</li> <li>• Create awareness and obtain commitment from stakeholders</li> </ul>
<b>PHASE II</b> Diagnosis	Identify your current status <ul style="list-style-type: none"> <li>• Evaluate current status of organizational performance</li> <li>• Identify management gap and the desired performance</li> </ul>
<b>PHASE III</b> Develop strategy Plan	Plan and moving towards your destination <ul style="list-style-type: none"> <li>• Set targets, formulate strategies and implement action plan.</li> </ul>
<b>PHASE IV</b> Implement Performance System	
<b>PHASE V</b> Implement Performance Management System	Monitor and reinforce performance <ul style="list-style-type: none"> <li>• Monitor and review plans to serve each stakeholders</li> <li>• Motivate and encourage involvement of employees</li> </ul>

From the framework, human value ecosystem integrated productivity measurement system can be developed with the following procedure.

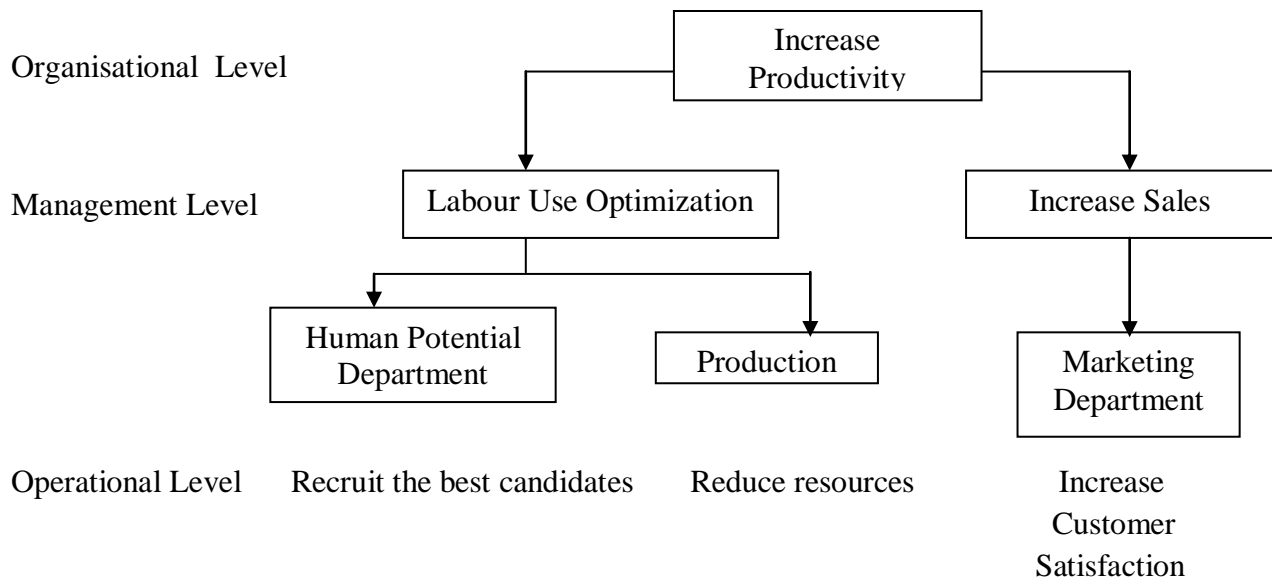
**Step 1: Measurement Task Force Formulation**

The task force team would include all level in the organizations and stakeholders. The task force is lead by an experience senior management who understand the values, culture and operation of the organization. The process could be speed up with top down approach and assistance of union.

**Step 2: Determine Productivity Measurement Parameters**

After getting support from organizations’ stakeholders, measurement of task force should first identify the objectives of measurement at the organization level. The productivity goal must be delivered through management level and cascaded down to the objectives of specific functions and individuals.

Figure 4 Illustration of Productivity Goal and Objective



For example, ABC Company is facing program with high labour turnover. As the result, management introduces loyalty bonus that may be effective in the short term but the longer term effectiveness is in doubt. In human centered productivity, we need to evaluate until the underlying problem is solved. This could be management style and culture of the organization, problems with one or more key supervisors, dissatisfaction with the working conditions – or any one of a number of causes. The main objective of this step is to find the wound so that we put sticking plaster on the wound.

### Step 3: Develop indicators

After understanding the factors that affect the various components of the productivity index: the way in which the various inputs and outputs relate to, and reflect, changes in operating parameters. We need to develop the indicators of productivity measurement that reach the heart of measurement. The indicators should fulfil the following criteria:

1. Measure something significant as productivity levers
2. Meaningful and action-oriented
3. Output and Input should reasonably related
4. Used by industry as benchmarked organization when doing comparison.
5. Reliability and consistent data to show accuracy of measurement.
6. Practicality where the indicators can be easily understood by employees

Table 4: Key Management Indicators

Key productivity Levers		Indicators
Output	Increase sales	Sales per employee
	Increase output per unit cost of production	Value added-to-sales ratio
		Profit margin
		Profit to value added ratio
Labour Productivity	÷	
Input	Optimise use of labour	Labour cost competitiveness
		Labour cost per employee
	Optimise use of capital	Sales per dollar of capital
		Capital intensity
		Capital productivity

### Step 4: Design and Implementation

Human value ecosystem measure needs to establish accountabilities and responsibilities for the use of data. Then, we need to establish a link between indicators and how each indicator does affects overall performance for the practicability.

After establishment of system, different technology is used to collect and analyse data. The system covers daily operations and management information system. Since the system measure human potential, the system should be flexible and adaptable to the organizational culture. Sufficient training is conducted to ensure all employees understand the objective and measured used and how does the measures relate to their work.

## Step 5: Monitor and Review

The system is monitored and reviewed to ensure the system is up to date. In addition, the system is improved to provide the best result.

## Productivity Improvement in Action

Ammons (1985), Aw, Chong and Roberts(2003) and Aghazadeh (2007) identified the common reasons for failure of productivity improvement as:

1. Fail to understand the factors that affect the various component of productivity index
2. Organisations tend to focus on reducing input rather than on increasing outputs.
3. Technical issues, such as the application of technology, are overemphasized in many unsuccessful productivity drives, while the human issues are neglected.
4. Many organizations concentrate on short term approaches to productivity improvement – at the expense of longer term.

Katzell and Guzzo (1983); Kuhlant, Edtmayr and Sihm, 2011 and Zellner (2011) discussed the approaches of productivity approaches and the common approaches includes

1. Restructuring organization
2. Rationalizing the product/service range
3. Introducing financial incentive schemes
4. Applying technology to reduce staffs
5. Redesigning products / processes
6. Outsourcing / sub-contracting
7. Implementing a quality improvement
8. Conducting productivity audits
9. Changing management information system

However, these approaches would be sustained without putting focus on human approach (Bloom, and Reenen, 2011). Hence, in human potential productivity, we propose the following approaches and strategies to ensure the productivity improvement reach the heart and soul of all employees.

In human value ecosystem approach, it always initiates with the establishment a clear focus for the productivity improvement strategy. To achieve an optimum effect, a separate office or operation centre is set up. All session regards to productivity improvement activities such as briefing, training, discussion, reporting would be taking place here. In addition, the office must be placed at the centre of visibility so that it is highly accessible to all staffs and must be regarded as nerve centre of the productivity program. This concept follows social learning theory that when the centre of productivity is placed in the visible centre, employees are actually

reminded their objectives to increase the organizational productivity. With this setting, the objectives reached to the sub-conscious mind of the employees and they would be motivated.

In human value ecosystem approach, organisations help to bring about a culture change in organization by nurturing all staff members in the system approach outline below. The management understands that culture cannot be change overnight but over time, it will happen as the programme involves everyone in the organization, clear and fair distribution of reward system when the productivity of the organization increased. The key principle of success includes the identify the real pain of the organization, strategic planning, accountability, responsibilities, ownership and the recognition of achievement.

In addition, creating relevant and meaningful performance measures that agreeable and supported by everyone in the organization. The participation and involvement reinforces the culture change in the organization especially they can foresee the returns of productivity increased.

Stakeholders in the organization need to be informed about the program, plan, progress, problems and successes to recognize different needs of different groups. Hence, a good communication channel is needed to distribute the information so that all the stakeholders are aware and better inform of the progress. In addition, organisations encourage to have a employees' relationship officer who should be supplemented with various forms of written communication including newsletters, posters, banner, social media such as Twitter, Facebook or Blog. All communication media and strategies can be exploited, including videos, broadcasts, competition and T-shirts.

Furthermore, running a campaign of "Sharing is Caring". Sharing knowledge on any updates of the activities such as background knowledge about the changes in products, processes, service and system that happened inside and outside of the organization can be done through this campaign. Hall of fame is suggested to provide credit and show appreciation to the employees who play their role in increasing organization productivity.

Besides, making provision for effective management and employees' cooperation. The agreement of distribution of benefits of the increase of productivity. Of critical importance is the accurate measurement of the increased wealth flowing from productivity improvement, the equitable sharing of it and the timing for distributing it. The most important key before implementing any productivity exercise, company needs to guarantee that nobody will be laid off as a result of productivity improvement because the direction of productivity is to increase the total output but not the reduction of input.

It is essential to establish a focus group to involve key person to formulate productivity programme such as measuring system, communication strategies, wealth-sharing approach. The focus group must involve all levels of organization.

Another human value ecosystem strategy is to set up a mentor and mentee system in the organization. The mentor should be an internal expert who is familiar with the standard operating procedure and an expert who we can refer to. The mentor is always supported with external experts who provide continuous knowledge support. In addition, organization would provide sufficient support to the mentor who have assigned in this role.

In human value ecosystem centre, recognizing achievements are the most essential key of success. Such recognition and could be delivered through several ways such as “free” holiday, gift vouchers, extra off-day for the high performer, dinner with the CEO. Do not underestimate the power of a handshake between CEO of the organization with an employee. It motivates employees in the long run.

## CONCLUSION

The traditional concept of productivity has reached to a critical dilemma. Focusing on development of technology, new management styles and procedures are only temporary boost the management productivity. It does not reflect the sustainable productivity strategies for the organisations. Various theoretical frameworks were reviewed to understand the root of productivity which includes system view of productivity, the economists approach, human centre productivity and attitude towards productivity. From the analysis, the new paradigm of productivity, the human value ecosystem is designed to provide a holistic approach to serve the needs of challenging business environment. As the result, the Triumvirate Productivity framework helps to explain the sustainability development of a nation. Several techniques were used to move towards human value ecosystem. With the analysis, the human value ecosystem can be created through Integrated Management of Productivity Activities (IMPACT) that involves 5 phases. In short, focusing on human extrinsic and intrinsic values becomes the fundamental to achieve sustainability development globally.

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