Training for Productivity?

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Addressing declining productivity growth

In respond to the Singapore's government call to increase productivity across industries, a new 5-month Workforce Skills Qualification Certified Productivity and Innovation Manager Programme was launched by the Singapore Manufacturers' Federation and the Workforce Development Agency (WDA) two weeks ago. This programme is aimed at developing productivity and innovation managers at small and medium enterprises who are expected to drive and raise the level of organizational productivity and innovation.

With productivity growth at 2.5% for the period 1995-2000 and 3.6% from 1990 to 2000, Singapore is lagging behind Taiwan and South Korea [(1)]. Although it is leading ahead of Hong Kong, the Singapore Government is taking concrete measures to ensure that productivity growth remain a key national agenda item for the next few years. To demonstrate its commitment to push and support productivity growth initiatives, the government has set up a National Productivity and Continuing Education Council (NPCEC) to be headed by deputy Prime Minister, Mr Teo Chee Hian. The NPECE will initially focus on 12 key industries that employ some 1.5 M or about half of Singapore's workforce of 3.94M (2008) that contributes 40% to the overall economical growth.

The 12 key industries identified are construction, electronics, precision engineering, transport engineering, general manufacturing, retail, food and beverage, hotel, health care, infocommunication, logistics and storage and administrative and support services. And the main objective of the NPECE is to help companies in these identified sectors to boost Singapore's productivity by 2 to 3 % every year for the next 10 years.

Productivity and computerisation

While one of the government's intentions is to help lift productivity growth at the general work force level, there is also a clear understanding that until the enterprises adopts, evolve and put in place an environment that promotes innovation; productivity growth cannot be sustained over time.

For some industries, eg infocommunication, precision engineering and electronics, a general belief to boost productivity growth is to increase the usage of computers and office automation. While this belief is embraced by many, researchers on the other hand point to inconclusive results. The "productivity paradox" popularized by Brynjolfsson in his paper "The productivity paradox of information technology" in 1993 and subsequent investigations by other investigators seem to suggest that although computers perform a variety of tasks, these tasks are not done in any particularly new or efficient manner, but rather they are only done faster.

One hypothesis explained that while computers on their own are productive, their productive gains are realized only after a lag period when the use of computers is at their full potential. Another hypothesis however portrays computers as simply not very productive as the productivity gain requires time and the scarce complementary human input. With these controversies, companies that plan to increase productivity growth purely through the use of office automation tools and deploying more computers for their work force may eventually not achieve the desired return on investment in such technologies.

Is Innovation the key?

Companies know that to survive, innovation is necessary and in fact, many companies recognize that innovation serves as a platform to improve efficiency, productivity, quality and competitive positioning to gain market shares in local and overseas markets.

In his paper, "The Transformation of Innovation into Technology, Economy and Society", the author, Kalaiselvan [(2)] outlined 7 different types of innovation:

1) Business model innovation where a multi-disciplinary "business model innovation" team generates alternative business models that understands the social, legal, competitive and technological environment;
2) Supply chain innovation is concerned about new sources of supply of raw materials, components and products from suppliers and delivering the output of these products to customers
3) Financial innovation on the other hand looks at developing new financial services and products that are progressive and innovative as well as the ability to react to tax laws
4) Incremental innovation is aimed at achieving short term goals by making minor changes over time to sustain company's growth without making sweeping changes to product lines, services or markets
5) Breakthrough, disruptive or radical innovation involves major advancements in the process/product/service or a combination of major changes in all these or in any other combination. Such disruptive innovation often enables the introduction of a totally new product/process/service that impact on quality, performance, cost and productivity
6) New technological systems often lead to quantum jump in quality, productivity and performance as such technological revolution creates a totally new market requiring new skills and at its extreme, it replaces existing product/process/service which leads to unemployment of existing work force
7) Social innovation is aimed at addressing social needs in the areas of poverty eradication, improving medical/health care and transport systems, reducing traffic congestion and unemployment and putting in place systems and processes to help the fast aging population, etc

The government and labour organisations should help companies look beyond incremental innovation to achieve short term gains in productivity growth but achieving breakthrough, disruptive and radical innovation in the medium and longer term. While the path is undeniably a difficult and challenging one, short term gains looking at immediate low hanging fruits can only put Singapore in a catch up position in the regional and global arena.

[(1)] Economics Division, Ministry of Trade and Industry Singapore, http://app-stg.mti.gov.sg/data/article/21/doc/NWS_Productivity.pdf

[(2)] K Kalaiselvan, Additional General Manager, Design and Unit Knowledge Officer, BHEL – Electronics Division, Bangalore

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