**Theme 4 – Knowledge- Worker Productivity: The biggest Challenge – Peter Drucker**

**Intro:**

* Most important contribution of management in the 20th century was the fifty fold increase in the productivity of the *manual worker* in manufacturing.
* Most important contribution management needs to make in 21st century is to increase the productivity of *knowledge work*  and *knowledge workers.*
* Most valuable assets of 20th century was its *production equipment..*  in 21st century is will be *knowledge workers* and their *productivity.*

**The Productivity of the Manuel Worker**

* Little over 100 years ago when people actually looked at manual work and manual workers and began to study them.
* First man to work as a manual worker and then to study manual waork was Frederick taylor.
* Throughout history there have been steady advances in what we today call productivity. Result of new tools, new methods, and new technologies.
* There are few advances throughout the ages in what the economist calls ‘labor’- that is productivity of the worker.
* It was axiomatic that workers could produce more only by working harder or by working longer hours.
* David Ricardo. Karl marx, there are enormous differences in skill between workers, but there are none in respect to productivity there than between hard workers and lazy ones.
* Productivity did not exist.
* In the decad after taylor first loked at work and studied it, the productivity of the manual worker began its unprecedented rise. Being growing at 3% per annum since then.
* On this achievement rest all of the economic and social gains of the 20th century.

**The Principles of Manual- Work Productivity**

* First task in making the manual worker more productive is to look at the task and to analyse its constituent motions. Record each motion and steps and the physical effort it takes and the time it takes.
* Each best motion is kept that can be done the simplest way, the easiest way and they way that puts the least physical and mental strain on the worker.
* Motions are then put into the job in a logical sequence. Finally the tools needed to do the motions are redesigned.
* Whenever we looked at a job the traditional tools are wrong for the task. Took taylor 20 years to perfect these methods.
* Countless further changes over last 100 years name has changed over the years too.
* To proclaim that ones method reject taylor or replaces him is almost standard public relations. For what made taylor and his method so powerful has alos made it unpopular.
* Historically the workers had skill. Taylor showed that in manual work there is no such thing. There are only simple repetitive motions.
* What makes them more productive is *knowledge*  the way the simple unskilled motions are put together organised and executed. Taylor was the first person to apply knowledge to work.
* Craft unions based on the mystique of craft skill were not happy with taylor.
* Taylor advocated workers be paid by productivity(output) not hours (input).
* Best example – total quality management. When deming did and what makes total quality management effective is to analyse and organise the job exactly the way taylor did. He also added quality control. In the 1970s he substituted closed circuit tv and computer simulation for taylors stopwatch and motion photos.
* During ww1 scientific mang swept through the us together with fords taylor based assembly line. In 1920s it swept across to west Europe and japan.
* During ww2 american and german achievement were squarely based on applying taylors principles.
* Germans applied rationalistaion to the job of soldier and military training. Enabled hitler to creat a superb fighting machine. Enabled Americans to outproduce the germans even though larger proportion of Americans were in the army.
* Since 1950 econ development has been largely based on copying what the us did in ww2.

**The Future of Manual-Worker Productivity**

* Taylors approach was designed for manual work in manufacturing and at first applied only to it. Still has enormous scope.
* There is equal or greater opportunity in developed countries to organise non manufacturing production on production principles now being develpod in manufacturing.
* There is equally a tremendous amount of knowledge work, including work requiring highly advanced and thoroughly theoretical knowledge , that includes manual operation.
* In developed countries the central challenge is no longer to make maual work more productive. The challenge will be to make knowledge workers more productive.
* Knowledge workers are rapidly becoming the largest single group in the work force of every developed country.

**What we know about knowledge- worker productivity**

* Work on this subject has barely begun.
* In terms of actual work on knowledge worker productivity we will be in the year 2000 roughly where wer were in the year 1900 in terms of the productivity of the manual worker.
* Six major factors determine knowledge worker productivity.
  + Kwp demand that we ask the question ‘what is the task?’
  + It demands that we impose the responsibility for their productivity on the individual knowledge workers themselves. Knowledge workers have to manage themselves, they have autonomy.
  + Continuing innovation has to be part of the work, the task and the responsibility of knowledge workers.
  + Knowledge work requires continuous learning on the part of the knowledge worker, but equally continuous teaching on the part of the knowledge worker.
  + Productivity of the knowledge worker is not at least not primarily a matter of the quantity of output, quality is at least as important.
  + Kwp requires that the worker is both seen and treated as an asset rather than a cost, it requires them to want to work for th org in preference to all other opportunities.
* Each of these requirements is almost the exact opposie of what is needed to increase the productivity of the manual worker.
* In most knowledge work, quality is not a minimum and a restraint. Quality is the essence of the output.
* Producity of knowledge work has to aim first at obtaining quality and not minimum quality but optimum if not max quality.
* Means that we approach the task of making more productive the knowledge worker form the quality of the work rather than the qunaitity it also means that we will have to learn to define quality.

**What is the task?**

* In manual work the key question is how should the work be done. In manual work the task is always given.
* One reason for this is that knowledge work, unlike manual work does not program the worker. What is to be done is always obvious in manual work.
* Nurse- largely her own decision to decide what to do.
* First requirement is to find out what the task is so as to make it possible to concentrate knowledge workers on the task and to eliminate everything else.
* Requires the workers themselves define what the task is or should be and only the workers themselves can do that.
* *What is your task? What should it be? What should you be expected to contribute? What hampers you in doing your task and should be eliminated?*
* Questions only the workers can answer themselves. It then usually takes time and hard work to restructure their jobs so that they can actually make the contribution they are already being paid for.
* Asking the questions and taking action on the answers usually doubles or triples knowledge worker productivity and quite fast.
* Nurses in major hospital asked what their task was, divided between patient care and satisfying the physicians. They were in complete agreement on the thing s that made them unproductive. – chores- paper work, arranging flowers , answering calls etc. This work could be done by a non nurse for a fraction of the price. Productivity doubled after change. Patent satisfaction doubled.
* Once task is defined, next requirements can be tackled:
  + KW responsibility for their own contribution. His own decision what he or she should be held accountable for in terms of quality and quantity.
  + Continuous innovation *has to be built into the knowledge workers job.*
  + *Continuous learning and continuous teaching*  have to be built into the job.
* What is quality?eg. surgeons already measured by success rates in difficult procedures. By and large, we mainly have judgments arather than measures regarding the quality of a great deal of knowledge work.
* Main trouble is not the difficulty of measuring quality, it is the difficult and more particularly the sharp disagreements in defining what the task is and what it should be.
* Example American school system. Shitty schools in center, private schools beside them are good. Major reason is surely that the two kinds of school define their task differently. Typical public school –helping the underprivileged, while the private school- enabling those who want to learn, to learn. One is governed by its scholastic failures the other one by its scholastic successes.
* Similarly the research department at two major pharmaceutical companies have totally different results because they define their tasks differently.
* To define quality in knowledge work and to convert the definition into knp is thus to a large extent a matter of defining the task.
* Requires the difficult risk taking and always controversial definition as to what results are for a given enterprise and a given activity. We therefore actually know how to do it.

**The knowledge worker as Capital Asset**

* In no other area is the difference greater between manual worker productivity and knowledge worker productivity than in their respective *economics.*
* Economic theory and most business practice sees manual workers as a cost.
* To be productive kw must be considered a capital asset. Costs need to be controlled and reduced, assets need to be made to grow.
* High turnover of employees is expensive. Ford company increased wages to counteract this. Thought higher wages would lower profit instead in the first year profits almost doubled.
* However short of the costs of turnover, rehiring, retraining and so on the manual worker is still being seen as a cost. Assumes that one manual worker is like any other manual worker.
* This is not true for knowledge work. Employees who do manual work do not own the means of production. They may have alot of valuable experience but that experience is valuable only at the place where they work. It is not portable.
* Knowledge workers however own the means of production. It is totally portable an enormous capital asset. They are mobile.
* Managements job is to preserve the assets of the institution in its care.

**The Technologists**

* Large number of knowledge workers do both knowledge work and manual work.- call them the technologists.
* Surgeons need the knowledge to diagnose the patient but also manual work to operate on him.
* Technologist group also contains large numbers of people in whose work knowledge is relatively subordinate-though it is always crucial.
* May also be the fastest growing group. Include the great majority of health care workers, lab technicians, rehabilitation technician. Etc. The technologist may be the true successor to the 19th and 20th century skilled workers.
* They are the one group in which developed countries can have a true and along lasting competitive advantage.
* Any country can at fairly low cost train a substantial nuber of high knowledge people. Eg india has been training large numbers of physicians and programmers.
* US is so far the only country that has developed this advantage through its unique nationwide systems of community colleges. Community college actually designed to educate technologist who have both the needed theoretical knowledge and the manual skill. On this rest both the still hugh productivity advantage of the American economy and the American ability to create new and different industries.
* Currently nothing is quite like the Americans.
* Famous Japanese school system produces either people prepared only for manual work or for knowledge work. Not until 2003 is the first Japanese institution devoted to train technologist supposed to get started.
* Other developed countries expected to catch up with the us fairly fast. Third world coutnreis decades behind.
* Example of fone company had to decide what is the task- it is to satisfy the customer, changed their train of thought. They were trained and though theoretical knowledge. Quality- had to be defined by techniction himself defined it as positive customer satisfaction.

**Knowledge work as a System**

* Productivity of the knowledge worker will almost always require that the work itself be restructured and be made part of the system.
* Example servicing expensive equipment-earth moving equipment. Traditionally seen as separate to selling the machines. Caterpillar company-what are we getting paid for? Answer is we are not getting paid for machinery. We are getting paid for what the machinery does at the customers place of business. Means keeping machinery running.
* In other words the answer is ‘we service’. This lead to a total restructuring of operations. The service rep usually a technologist has become the true decision maker.
* Example 25 orthopedic surgeion in med western us city, organised as a system to produce the highest quality work, make optimal use of the limited and expensive resources of operating and recovery rooms. And finally minimise costs. Each of the suregeons retains full control of his practice. Fully responsible for treatment of patient. Scheduled theatre to be used all day. Decided on best and cheapest tools, have their own random quality checks. As a result group now does almost four times as much work as it did before. Cut costs by 50% by cutting waste and standardising tools.

**How to begin?**

* Requires changes in basic attitude, whereas making the manual worker more productive only require telling the worker how to do the job.
* Not only on part of the individual worker but on the part of the whole org.
* First step is to find an area in teh org where there is a group of kw who are receptive. Next step is to work consistently, patiently and for a long time with this small group.
* First attempts greeted with great enthusiasm will run into unexpected problems.
* Only after the productivity of this group has been substantially increased that the new methods of work can be extended to a larger area.
* Main problems will be known. If properly piloted a great deal can be done to improve knowledge worker productivity.
* It is the biggest of the 21st management challenges. In developed countries it is their first survival requirement. Can be done with taylors model.
* Supply of young people available for manual work will be paridly shrinking in the developed countries. Only possible advantage developed contries can hope to have is in the supply of people prepared educated and trained for knowledge work.
* Therefore in 50 years developed countries can expect to have substantial advantages both in quantity and quality.

**The Governance of the Corporation**

* What does this mean for the governance of the corporation?
* Last 10-15 years pension funds and other investors vecame the main shre owners of publicly owned companies in developed companies. In us this has triggered a furios debate on the governance of corporations. Power has shifted to new owners.
* We will face the problem of the governance of corporations again. We will have to rederine the pupose of the employing org and of its management as both satisfying the legal owners and satisfying the owners of the human capial.
* The ability of orgs to survive will come to depend on their competitive advantage in making the knowledge worker more productive. The ability to attract and hold the best of the kw is the first and most fundamental precondition.
* However can this be measured or is it purely an intangible? Will surely be a central problem for mang for investor and capital markets.
* What does capitalism mean when knowledge governs rather than money? These question go byond the scope of this article. However it is certain that the emergence as key questions of the knowledge worker and of the kw productivity will within a few decades bring about fundamental changes in the very structure and nature of the economic system.