

EMPLOYABILITY OF YOUTH IN INDIA

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Abstract:

An increase in the number of young people globally seems to be one of the sources of future economic growth in India. However, the proportion of Indian youth in the labour force has been declining. Although with increase in school and college enrolment rates, the proportion of youth in the labour force has been declining, their high proportions in the labour force indicate that the problem youth unemployment underemployment would remain a serious policy issue for many more years to come in India. In this context, this paper examines the employment and unemployment situation of the youth in India. The paper also offers policy recommendations for increasing productive employment and reduction in unemployment for the youth by taking the necessary measures and enriching them with the necessary skills.

Introduction:

Young people are not only a major human resource for development, they are also key agents for social change and a driving force for economic development and technological innovation. But the major challenge is harnessing all these resources. The critical aspects of the challenge are mostly related to labour market entry where young people encounter difficulties in finding and maintaining a decent job. The growing large number of unemployed youth is one of the most daunting problems faced by developed and developing countries alike. Thus the issue of youth employment and unemployment features prominently on the international development agenda.

Youth, defined by the United Nations as persons between the ages of 15 and 24, is a transitional period from childhood to adulthood, represents almost 18 per cent of the current global population. According to the Census of India 2001, the total population of India was 1,028.61 million. Nearly 40 per cent of the population was in the age group of 13 to 35 years. The number of youth aged 15 to 24 years was 195.07 million, which accounted for 19.0 per cent of the whole population. India contributes about 33 per cent of youth population in the developing Asian countries (ADB, 2008).

The same is the case in India. Recent reports indicate that as many as 47 per cent of Indian graduates are not qualified for any industry job. Adding fuel to fire, surveys by various agencies reveal that more than 70 per cent of our engineering graduates are not employable. The distressing news is that the problem of employability in India is rampant in both blue and white-collar jobs.

The Labour Bureau under Union Ministry of Labour and Employment released an Annual Employment & Unemployment Survey report. The report for 2012-13 states that Sikkim has the maximum number of unemployed people where as Chhattisgarh has the minimum number of unemployed people in the country. Overall unemployment rate of the country is 4.7%. In Northern India, Jammu and Kashmir has t h e maximum unemployment rate followed by Himachal Pradesh, Delhi, Chandigarh, Punjab and Haryana. Unemployment rate in rural area is 4.4% whereas in urban area it is 5.7%.

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Objective:

Unemployment has been one of the biggest challenges plaguing the global economy. Closer home, going statistics, a staggering 13.3 per cent of India's population in the age group of 15-29 years are unemployed. Yet, as our unemployment figures continue to rise, almost every industry, bе manufacturing, technology, hospitality or corporate, is facing a shortage of skilled workforce. The real problem is finding suitable candidates to fill jobs. In this paper we are going to analyse the causes that cause unemployment in India and how these can be overcome.

Problem Identification:

The crucial question we first need to ask is whether we are unemployed or unemployable? Are there enough jobs or do we really possess the right skills and qualifications for the jobs available?

Causes:

1. Lack of Quality Education:

One of the main problems lies in our system of imparting education and the subsequent assessment of additional soft skills and capabilities needed to survive in today's competitive work atmosphere. Graduates often complain that they were not exposed to life skills training or internship opportunities during their graduation years, which would have prepared them for the real workplace scenario. Also, India is an agricultural country, more than 70% of the people of India live in villages and their main source of livelihood is cultivation. Unfortunately, a cultivator's son, after receiving University degree, does not want to follow his father's profession. He would prefer to rot in

cities and towns, in search of clerical employment. This has made our country's unemployment problem more acute and far more distressing.Lack of industrial and technical training is also one of the major causes, contributing to the mass- unemployment among the educated young men in India. There are a very few technical and engineering institutions in the country, and, secondly, technical education is so costly that common people cannot afford to get their wards admitted in these institutions.

2. Providing employment to growing population:

This is so because in developing economies majority of the population is illiterate. The burden of school age population has already shown signs of becoming unbearable. The proportion of children in schools is increasing fast and, vast numbers are still not covered. The absolute number or illiterate persons increases every year. This is only an indication of the wastage of human resources for want of appropriate development opportunities. India, being developing country, has a limited number of jobs available. Due to the increasing number of people, the competition for the most menial jobs is also tremendous. According to EconomyWatch.com, in 1972-73, unemployment rates in rural areas were 1.2 for males and 0.5 for females, and in urban areas, it was 4.8 for males and 6.0 for females. This unemployment rate rose to 2.3 for males and 1.5 for females in rural areas and 4.9 for males and 8.2 for females in urban areas in

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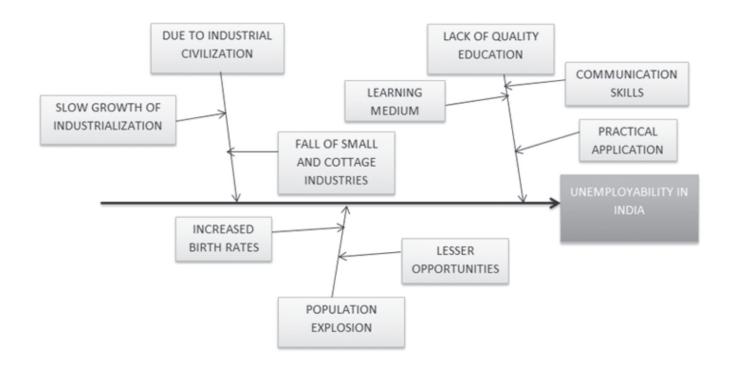
1998-99. With the increasing population, unemployment rates are bound to rise even further. The population of our country is everrising. The abnormal rise in population has intensified the problem of unemployment in India. That is why the problem of employment has been getting more and more acute every year.

3. Unemployment due to Industrial Civilisation:

In the olden days, when the population of the world was smaller, there was hardly a person who was not employed in some way or other to earn a living. But this situation no longer exists. In those days most people lived in the rural areas and depended on agriculture and cottage industries. But

industrial civilization brought about a change in the situation. It introduced machines, and as a single machine can do the work of many men, it naturally threw many persons out of employment. No doubt, this industrial civilization has greatly increased the wants of and opened up many new opportunities for employment. But this increase in scope for employment has not been able to absorb the men discharged. However, the automation of works has complicated the unemployment problem in India. The highly sophisticated machineries are run by skilled and trained people. On one hand, the skilled people get employed in these large industries. But, the large masses of unskilled Indians find it hard to get a job that suits their skills.

Root Cause Analysis:



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Solutions:

To solve the problem a change of outlook is also needed. It is a fact that no government can provide employment for all the unemployed youths. However, there is a need for harmonious development of economic opportunities.

- 1. Practical Education System: Our education system should be more practical. Vocational education can offer greater employment opportunities to our youths. A system of education should be evolved where students are given technical training so that will eventually help them in securing suitable jobs in appropriate lines of occupations.
- 2. Revival of small and cottage industries: By reviving cottage and small-scale industries we can also solve the problem of rural unemployment. The existing cottage industries are to be revitalized and along with them new industries on cottage basis should be started. Cottage industries can serve not only as whole time occupations to many but also as subsidiary means of livelihood to thousands.
- 3. Economic opportunities in agriculture: The scope for employment of the educated young men in in the field of agricultural is often forgotten. The introduction of better farming methods, cultivation of new crops, running of poultry farms, gardening, etc, are possible lines of work which young men with technical training and initiative may take up with profit.

4. Control Population Explosion: However, all these will be of no avail unless population explosion is controlled. Indeed hunger, distress and unemployment will rule the land unless the birth rate is reduced to an optimum level.

Conclusion:

The Employment ratio can be increased by providing the necessary skills and by making the above mentioned changes. Some of the methods given above may be tried for minimizing the effects of unemployment. Since this is a very complex problem, it is hardly possible for combating it by a few remedies. Its solution depends on a variety of economic and social factors, which when corrected will help remove unemployment completely in India.

References:

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Six Sigma: "Robust Problem Solving Approach"

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1. Introduction:

Six Sigma is new, emerging, approach to quality assurance and quality management with emphasis on continuous quality improvements. The main goal of this approach is reaching level of and expectations of today's demanding customer. A term Sigma Quality Level is used as an indicator of a process goodness. Lower Sigma quality level means greater possibility of defective products, while, higher Sigma quality level means smaller possibility of defective products within process.

Six Sigma seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and minimizing variability in manufacturing and business processes. It uses a set of quality management methods, mainly empirical, statistical methods.

If Sigma quality level equals six, chances for defective products are 3.4 ppm. Achieving Six Sigma quality level involves leadership, infrastructure, appropriate tools and methods, while quality have to become a part of corporate business plan.

The main objective of Six Sigma initiative is to aggressively attack costs of a quality. Overall costs of quality

are, usually, divided in tangible and intangible part. The tangible or visible part of costs of quality, e.g. inspection and warranty costs, scrap, rework and reject, can be approximated with only 10-15 % of overall costs of quality. Remaining 85-90 % of quality costs are usually intangible and, therefore, overlooked and neglected companies' quality costs analyses. Tools and methodology within Six Sigma deal with overall costs of quality, both tangible and intangible parts, trying to minimize it, while, in the same time, increasing

overall quality level contribute to company business success and profitability.

2. The Sigma Methodology

A Six Sigma project, which deals with identification and reduction of production cost in the deburring process for gravity die-casting turbo housing, was undertaken within company for production automotive parts.

In this project the Six Sigma approach, based on team, works through the structured DMAIC methodology (Define, Measure, Analyse, Improve, and Control phases), Figure 1.

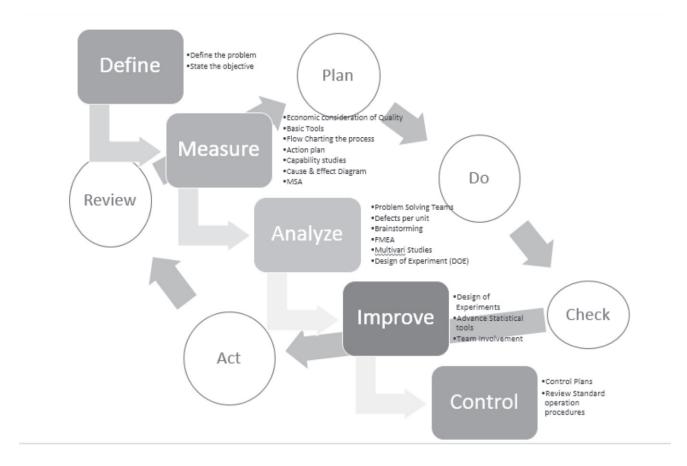


Figure 1: Six Sigma Methodology to solve a complex problem with PDCA

2.1 Define Phase:

Within Define phase are articulated problem descriptions, objectives and metrics as well as solution strategy.

The main goal was to identify and decrease expenses in the deburring department for aluminum castings through times and scrap reduction for at

least 30%. There were several major causes for the high expenses variability in castings quality, too many handcrafts, and to long control time.

The main objectives of undertaken projects were to identify areas in the process where extra expenses exist, identify the biggest impact on production expenses, introduce appropriate measurement system, improve process and reduce expenses on production times, and implement improvements.

An adequate metrics for evaluating projects success should be established. These metrics includes ratio volume/cost, labour cost, tool cost, scrap cost, number of nonconforming or defect parts per million (ppm), and Rolled Throughput Yield (RTY), the probability that a part will pass through multiple process steps without a defect.

When the project was started, few useful historical data were available, so the first step was to collect and select these data in the deburring processes. On the base of

the collected data decision about selection of process for improvement should be made, all process phases should be screened and appropriate action plan for minimizing variability within the process as well as reduction of production times prepared.

In accordance to Six Sigma philosophy, Define, Measure, Analyse, Improve and Control strategy approach was employed.

In accordance with DMAIC methodology, project goals should be defined, crossfunctional teams formed including individuals with adequate process knowledge, historical information collected, and appropriate process selected for improvements. Furthermore, process map and cause and effect diagram should be define, process FMEA conducted and, based on obtained results, required actions and tools for process analysis selected. Appropriate action plans and design of experiment methods should be employed, and diverse control charts used for success monitoring.

2.2 Measure Phase:

One of the objectives of project was to identify major process variables impacting the high expenses. Pareto chart for total expenses, Figure 2, shows that the highest impact has labour costs with 57.8%, following by production centre and headquarter costs, but the last two, as well as

production service costs, were successfully reduced with internal system reorganization of company.

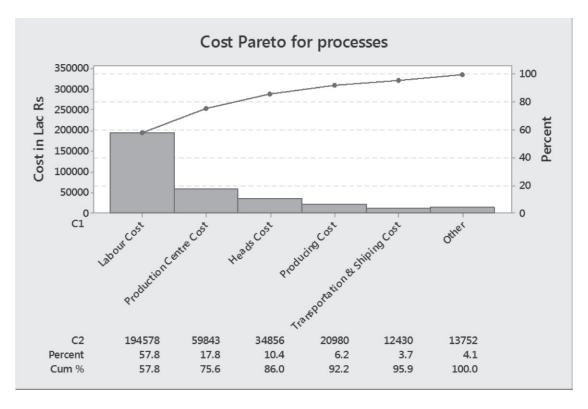


Figure 2: Cost impact analysis

The first undertaken team task was to completion of a thought process map, Figure 3. Team approach and idea how to solve the problem was elaborated through the process map.

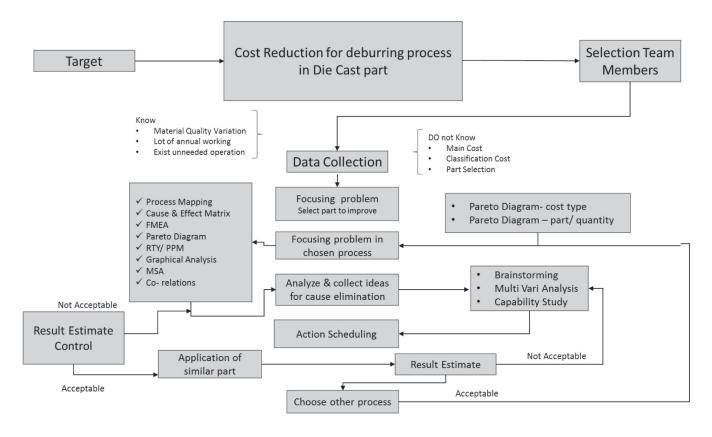


Figure 3: Process through Map

The chosen deburring processes for housing involves following production steps:

- Sawing residual of feeding system,
- Drilling,
- Burrs removal cleaning bases for clamping on machining area,
- Rough grinding burrs removal in the dividing plain, and
- Control material defects and simulation of machining clamping system.

Process map was drawn for all operations in the deburring process, and a list of the input and output variables were completed. The input variables were ranked as, Critical, Noise, Controllable and Standard operating procedures variable and, furthermore, non-value added operations are defined and marked.

Team decision was that all variables should be analyzed using a cause and effect matrix to identify the key critical input variables for further study. The product

diameter and tube length non-conformance, deformation of parts, quality of surface as well as scrap are evaluated using cause and effect matrix. Each team member filled in a questionnaire scoring influence of input variables on non-conformance and defects. Team decided that the main variables for further analyzing are Grossly burr, Material and Operator from Press operation, Control operation and, Sawing and Drilling operation.

Moreover, during period from nine months actual data for observed process were collected and ppm and RTY indices are calculated.

As Pareto diagram showed the highest volume of material scrap was in the Press operation because 60 % of scrap was in the direct relationship with removal burr on the press. Also, based on Pareto diagram of material scrap, conclusion was that the Material in the Sawing and Drilling operation has minor impact on the expenses level. So, at the end of this phase, decision was that Press and Control operations should be main objectives of further improvements.

2.3 Analyze Phase:

Firstly, FMEA for the deburring process was made. The most critical operations were the Control operation and the Press operation. Conducted analyze showed that data before Press operation were normal distributed while, after operation data were nonnormal distributed.

The measurement system analysis for controlling the most important

dimension of housing (4.7mm) with two Operator and two trials per Operator was conducted. The result showed that Operator #1 needs some training, while Operator #2 has good measuring results. In addition, the measurement gages are reliable.

The data means were analyzed before and after Press operation and results showed that there wasn't significant difference between group means, but although the factor of significance wasn't smaller than 5 % it was very close (5.3%) so obtained result should be taken with care. It was obviously that something affects normality of data during the Press operation and, after detailed analyses of all process conditions, it was decided to do additional analysis taking into consideration three-positioning

points (N) in the casting parts, Also, additional measurements are made to check influence of burrs size to the variability of part dimensions. Results of Analysis of Variance, Figure 4, provide basis for conclusion that the size of burrs have direct influence on output dimension. The applied Correlation analyses also showed that increase in burrs result with decrease in dimension on base N. Results on Figure 5 showed that in the base N1 and N2 correlation is different from zero, while in the base N3 correlation is equal to zero which means that there aren't linearity correlation between observed variables. At the end of this phase the Multi-vary analysis was conducted to check drawn conclusion, as is show on the Figure 6.

Figure 4: Analysis of Variance

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Correlations: burr mm; N1; N2; N3
burr mm N1 N2
N1 -0,880
0,000
N2 -0,584 0,702
0,001 0,000
N3 -0,249 0,420 0,728
0,184 0,021 0,000
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Figure 5: Correlation Matrix

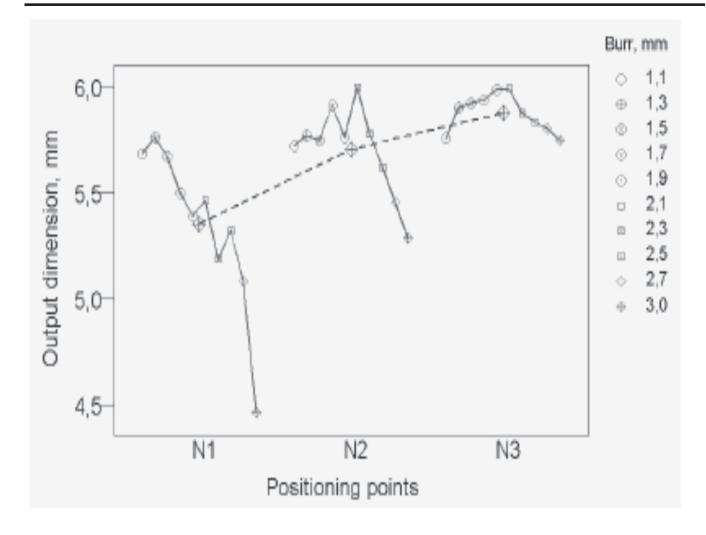


Figure 6: Multi-vary Chart

2.4 Improve:

Through followed brainstorming session decision was made that tool modification is needed to reduce cutting forces and avoid scrap appearance. Modification was applied and significant results were obtained, primarily in scrap and tool wearing reduction.

Although, significant improvements where achieved, defined goals where not jet met, so further experimentation where conducted with different clamping system in the machining area.

Obtained results lead the way to make some amendments in the clamping system to avoid or decrease impact of material scrap and automatically decrease scrap expenses. After appropriate tool construction, several experiments with external clamping were done with process capability study and measurement system Analysis (Figure 7).

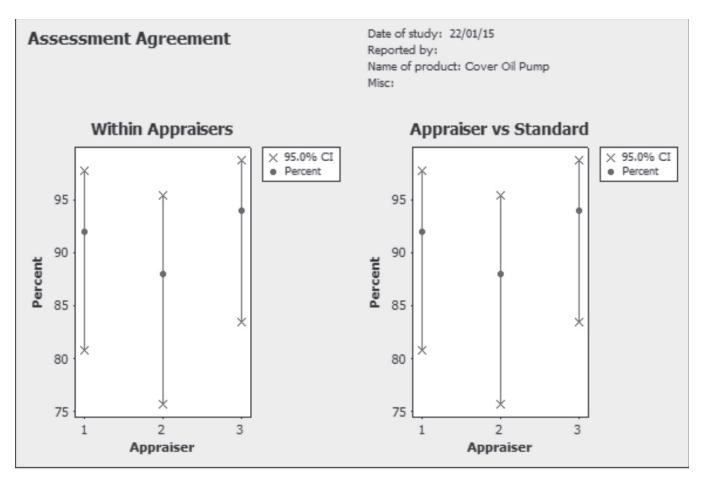


Figure 7: Measurement system analysis

2.5 Control Phase:

The analyses results showed that there weren't any significant differences on the critical dimensions, but the most important fact was that the radial accuracy in the defined diameters was unsatisfied. Experiment was repeated with external clamping system, but this time with burr classification, and controlling surface for clamping on parts. Results were analyzed and final decision made about external clamping system application in the machining area.

After repeated experiment with external clamping system better results were obtained while, in the same time, all critical and functional dimensions had good capability. The most important conclusion was that dimension of burr hadn't any important impact on machining area.

After repeated experiment with external clamping system better results were obtained while, in the same time, all critical and functional dimensions had good capability. The most important conclusion was that dimension of burr hadn't any important impact on machining area.

Final decision was that the external clamping system will be applied on one production line and, if proved acceptable, after certain period of time will be applied on others production lines. And map this solution on the similar castings.

To make that possible some simple modifications was needed on the casting die to secure quality surface on the castings for external clamping.

In this, final phase of DMAIC methodology, a control plan was developed to ensure that processes and products consistently meets our and customer requirements, and to check how external clamping system impact on quality production levels.

3.0 Discussion & Final Conclusion:

Six sigma is an effective way to find out where the greatest process needs improvement and which the softest points of the process are. Also, six sigma provide measurable indicators and adequate data for analytical analysis. Systematic application of Six Sigma DMAIC tools and methodology within an automotive parts production results with several achievements.

The achieved results are:

- Reduced tool expenses for 40 %,
- Reduced costs of poor quality (COPQ) for 55 %, and
- Reduced labours expenses for 59 %.

Also, the significant results are achieved by two indexes that are not dependent on the volume of production:

- Production time reduction for 38 %, and
- Index cost/volume reduction for 31 %.

Generally, improvements through reduced Production time, Control time, Material and Internal scrap will give annual benefits of Rs 7,20000 annually.

Expected annual benefits of external clamping system application is Rs 1000000 Annually.

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HOW EFFCETIVELY COMBINE ALL THE MANAGEMENT SYSTEM

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One of the question often asked is "Why so many management systems and why not have one simple standard or guideline." Attempts are made to get certification and awards for all systems. But ultimately the requirement is to satisfy all interested parties to get the benefit for the growth of the business.

The latest version of automotive standard (requirement) is combining all management system such as TQM, TPM and to the extent Lean manufacturing. It is essential to understand the requirements of IATF 16949 and attempt to link with TQM and TPM:

(Only few examples of link provided here)

No.	IATF 16949:2016	TQM	TPM
1.	Quality Policy (5.2.1) (Intentions & Directions of an organisation)	Vision (ASP rational description of what an organisation wanted to achieve)	TPM Policy
2.	Quality objectives (6.2)	Business Objectives Strategy management	TPM Objectives
2.1	Quality objectives and planning to achieve them – 4 W & 1 H (6.2)	Policy deployment & Hoshin sheet (Action plan sheet)	
3.	Monitoring, measurement, analysis & evaluation (9.1)	Functional reviews, TQM diagnosis	Experience
4.	Organisational knowledge (7.1.6)	Experience gained from previous years success/Failures	
5.	Continual improvement (10.3)	Kaizen, QC Story,	JH kaizen & KK
6.	Environment for the operation and processes (7.1.4.1)	58	5 S (removal of 5 Gemba evils)
7.	Total productive maintenance (8.5.1.5)		Infrastructure management
8.	Customer satisfaction (9.1.2)	The Aim is to satisfy all stake holders	
9.	Lean Manufacturing (7.1.3.1)	TPS	TPS

1. Why TPM & TQM

- TPM is total profit management. This will be achieved by changing
- a) Equipments b) People c) Company
- In TQM (Deming award criteria) also, Profit is one of the vital requirement
- "Organization's objectives" are to aim for ensuring the appropriate profit and growth in the long term by achieving consistent and continuous customer satisfaction as well as to increase the employees satisfaction, the benefit to all the stakeholders includes society, business partners, and shareholders.

2. What is the difference between TQM & TPM?

• TQM is for overall business mangement and TPM is infrastructure management

3. How to gain knowledge

- TPM is experience rather then knowledge.
- TPM is combination of experience and knowledge

4. How to gain experience

• Reducing the talk and increasing the do.keep-do.Doityourself!

5. How to start

- TQM: start with daily routine management to achieve stability & predictability in the process between plan & actual
- TPM: basics are cleaning & doing 1s & 2s; to start with
- IATF 16949: Understand the requirements of all stake holders and aim is to fulfil them (Clause 4.2)

6. Where to start?

• Plan and aim to achieve production

targets. In case of gap, identify why & aim to eliminate or minimise

- And do Daily routine management to achieve production targets, customer delivery and eliminate/reduce quality issues
- One may face many issues, accumulate and start working on it!
- Start with JH activity (clause 7.1.4 of IATF 16949)

7. What is JH?

• JH means JHISHU HOZEN (English meaning automonous maintenance).

8. What are the steps of JH

• JH consists of 7 steps

9. What are the important steps of JH

- The vital steps: step 1, step 2 & step 3. (fundamentals of TPM)
- i. Step 1: Initial cleaning
- ii. Step 2: Removal of soc (source of contamination), HTA (Hard to Access)
- iii. Step 3: Creation of tentative standards.

By this way stability and predictability of process can be established such that we improve satisfaction of customers

10. What are step 1 activity?

- step 1 is called "initial cleaning" (functional cleaning)
- during cleaning, focus only on cleaning
- do not think- focus only on thorough cleaning
- during cleaning identify abnormalities in the equipment (FUGUAI)
- Clasify them into 7 category. Clasify start from the right side of the table (7th fuguai to 1st). After identifying fuguais, remove the fugais by action

· Also identify hta & soc

Expectation of step 1: removal of all fuguai & thorough cleaning of equipment

11. What is step 2

- Remaining fuguai identified in step 1 will be removed in this step
- Remember the links between step 1 to 2-removal of hta & soc
- Kai-zen is needed to remove fugui.
 - How to classify HTA?
 - i. HTA- for Cleaning
 - ii. HTA- for Lubrication
 - iii. HTA-for Inspection
 - iv. HTA- for Tightening
 - v. HTA- for Adjustment
 - vi. HTA-For Operation
 - · What is the thinking behind SOC
 - i. Eliminate soc
 - ii. Minimise soc
 - iii. Localise soc
 - iv. Contain soc

Expectation of step 2: REMOVAL OF ALL HTA/SOC

12. What is step 3?

- Creation of standard for
 - 1. Cleaning
- 2. Lubrication
- 3. Inspection (cli)
- Create visual controls
- Create route map
- Create a check sheet
- The purpose of this step is to sustain the improvements made in step 1 & 2 Expectation of step 3: REDUCTION OF CLITIME

13. Too much elaboration of TPM (Sl. No 6 to 12) Why?

• Because these are the basics for achieving daily targets with least wastage. A well maintained Work shop will give a better consistent product

14. What is the purpose of DRM

- The ultimate aim is customer satisfaction, by reducing waste & variations and achieve stability between plan & actual
- Gain knowledge (7.1.6) & use continual improvement (10.3), problem solving methodology (10.2.3)

15. How DRM and policy management linked?

- Policy is aiming at challenging strategic objectives
- Daily routine management aims at reducing troubles in daily work & major operations in each department through standardisation and training

16. How to link/allign all management system?

Approach business as a system: step by step walk the thousand mile road without much concerned or bothering anybody.

Document business management system, using IATF 16949 or ISO 9001:2015 standard. But, combine these entire requirements in a simplified language. Rather than documentation for the purpose of certification; use for improving the satisfaction of all stake holders. Thus duplication can be avoided. Be it TQM, TPM or Lean sincerely apply the principles.

- TPM is for realising vision- which is the aspiration of any organisation
- TPM and lean are elements of TQM umbrella for satisfying customers
- Without TPM lean is not possible
- IATF 16949 is basic management system.

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Persons nominated to repre	sent the organisation			
Name	Designation	Mobile Email ID		
Membership of other Institution	ons if any			
Office		Signat	ure :	



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Date:	

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