

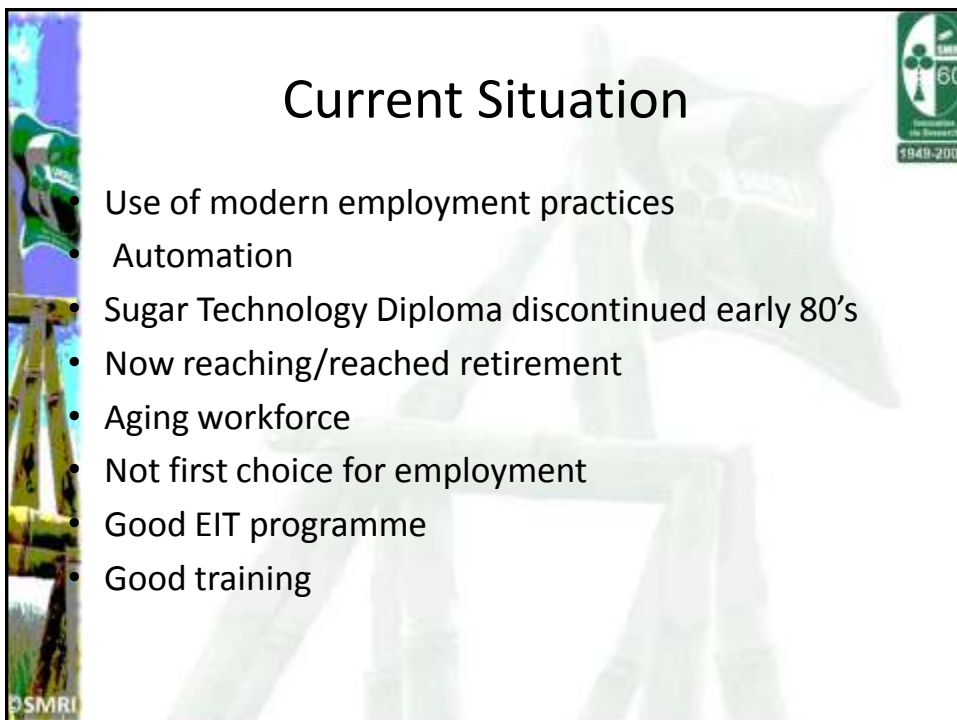


# Education: Needs and trends in modern manufacturing practices



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SASTA Working Group on Sugar Industry Skills Development and Shortages and the lack of Technology Adoption  
April 2010




## Current Situation



- Use of modern employment practices
- Automation
- Sugar Technology Diploma discontinued early 80's
- Now reaching/reached retirement
- Aging workforce
- Not first choice for employment
- Good EIT programme
- Good training


## ISSUES




- Have to employ relatively inexperienced people, with no exposure to the sugar industry
- High level of attrition due to retirement/ill-health of 'old-school' employees with skills gained through years of experience
  - Pan Boilers
  - Panel Operators
  - Boiler Operators
- Generation Y do not work for gold watches

## AREAS OF CONCERN




- Engineers
  - Electrical Engineering (Heavy Current)
  - Mechanical Engineering
- Process Managers
- Good quality Foremen
- Good quality artisans (esp. Instrumentation)
- Draughtsmen
- Cane Supply Management
- Estate managers in Agriculture
- Safety, Health and Environment Managers.
- Basically everywhere?



## Formal Training

- Operator – Shukela Training Centre
- Artisan – ITC, Normal Channels
- Supervisor – ??
- Management – SMRI



## Technical Skills Shortage

- South Africa produces about 1 400 engineering graduates a year  
(Saturday Star, 25 July 2009, p.5)
- This problem is replicated in other southern African countries, judging by university graduate registrations...



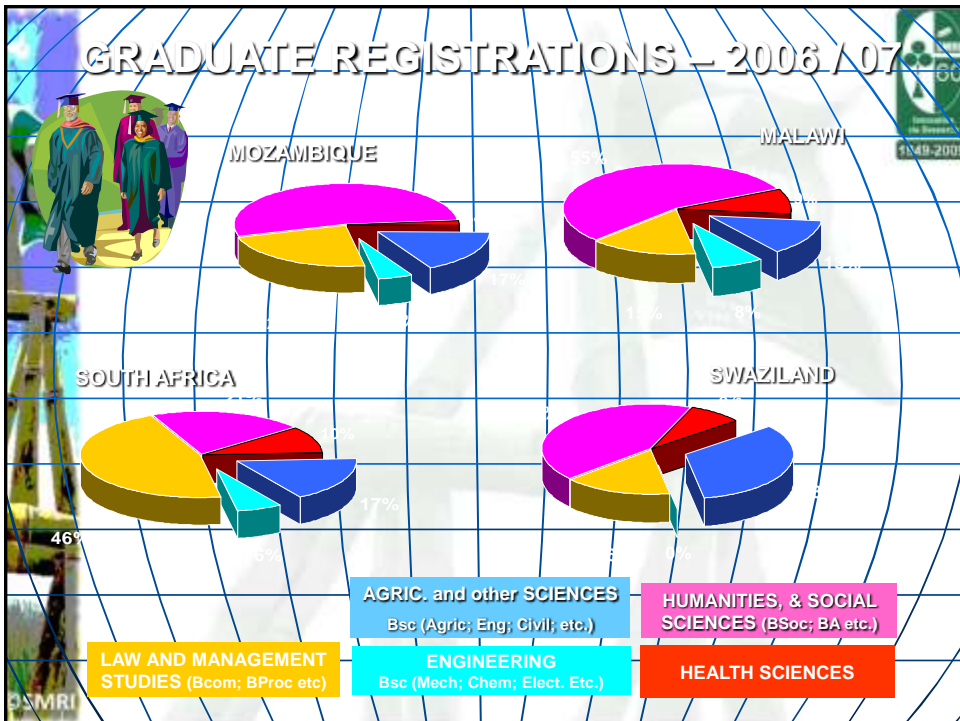
## Technical Skills Shortage not a Global Phenomenon

- South Korea, with a similar sized population to SA, produces 30 000 engineering graduates a year  
 (Saturday Star, 25 July 2009, p.5)
- India and China together produce about 900 000 engineers each year.  
 (Business Report, 24 January 2007)

**These countries “...approach the issue of human capital formation as a burning strategic priority of national significance.”**

(Business Report 24 January 2007)








## Engineering News

### 26 Feb – 4 Mar 2010



#### Steel

- The SA steel industry lacks technical and engineering skills and training given that, from 1997 to 2007, only 12,9% of the students enrolled across all engineering courses at universities and technikons achieved a degree or diploma (41 480 of the almost 321 460 enrolments)
- In the past ten years, an average of 1 700 engineers graduated each year
- Is it possible that the number is going to support the growth in these industries?



## Engineering News

### 26 Feb – 4 Mar 2010



#### Food & Beverage

- Hard, dedicated work, quality consciousness and the employment of well-trained and qualified food scientists and technologists are the ingredients needed to ensure that the South African food industry can withstand fierce competition from other countries

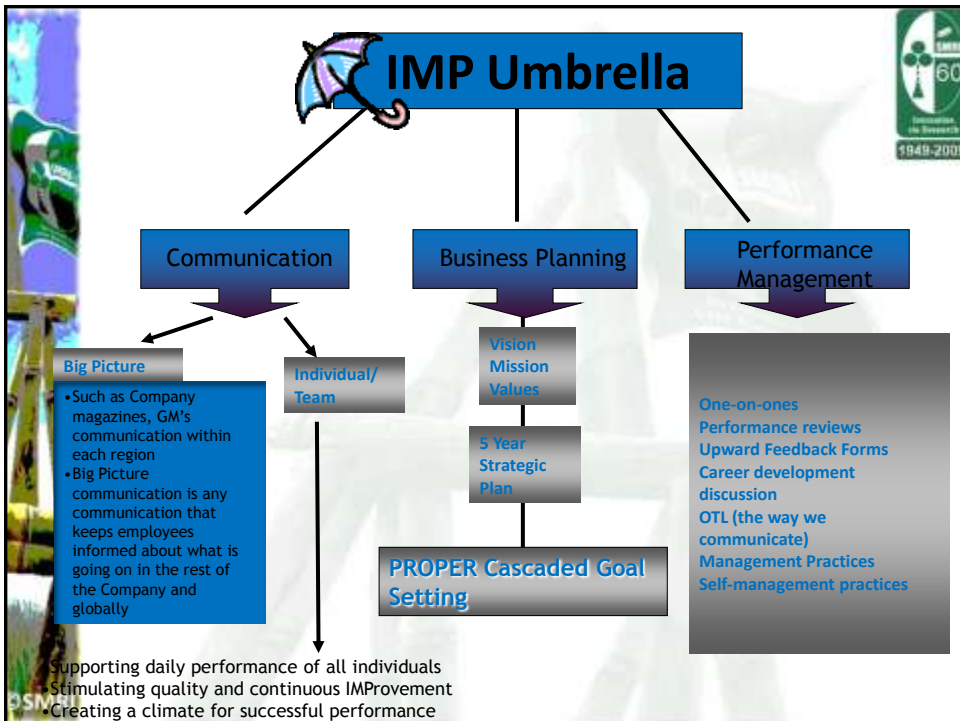


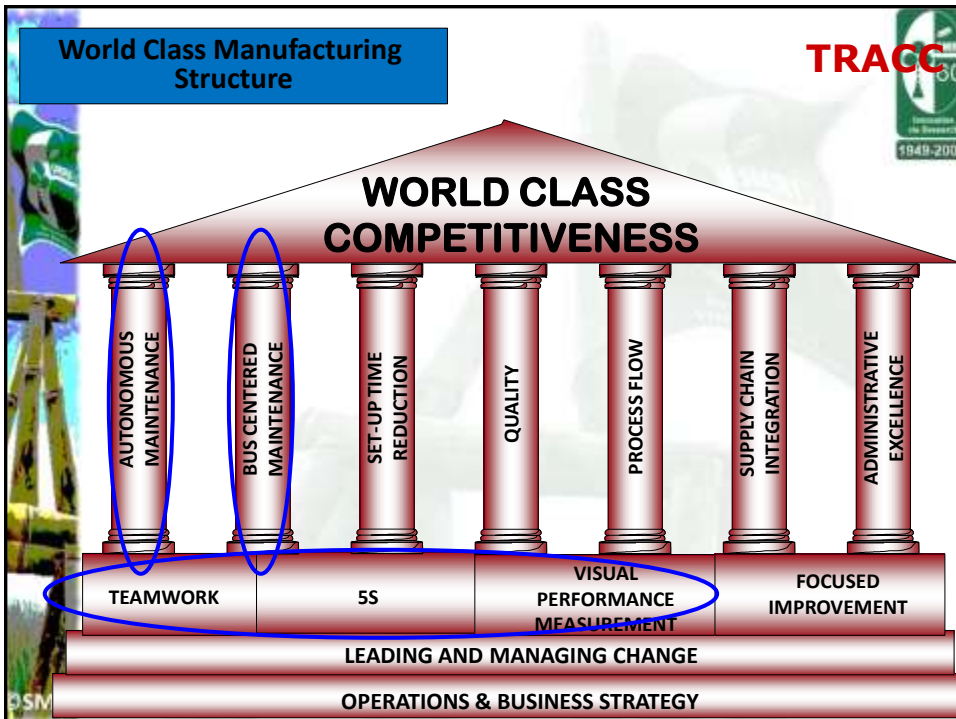
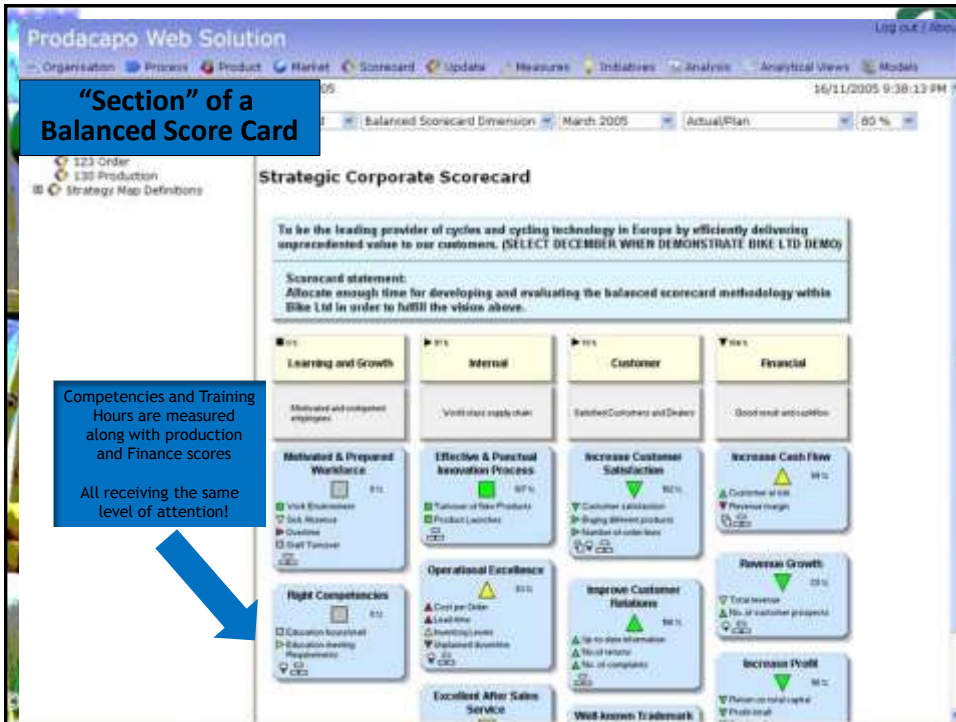
## Engineering News 9-15 April 2010

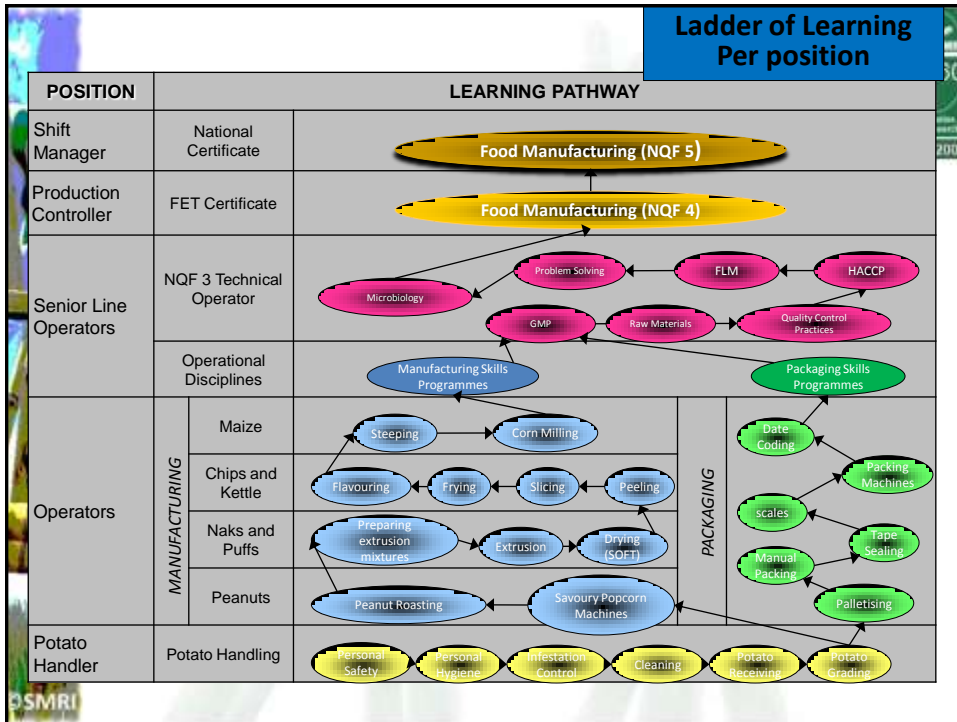


- Foundries, Forges & Die-casting
  - One of the challenges facing the manufacturing industry in South Africa is the skills shortage, which has a great impact on sustainability
- Rail Transport & Infrastructure
  - The shortage of skills and the difficulty in retaining skilled employees .....
  - Young graduates are more excited by the designing and building anew than managing maintenance









## Questions & Comments