

# TSP Symposium 2010



## **Will TSP Shape the future of Software Development in South Africa?**

**Prof Barry Dwolatzky, JCSE at Wits University**

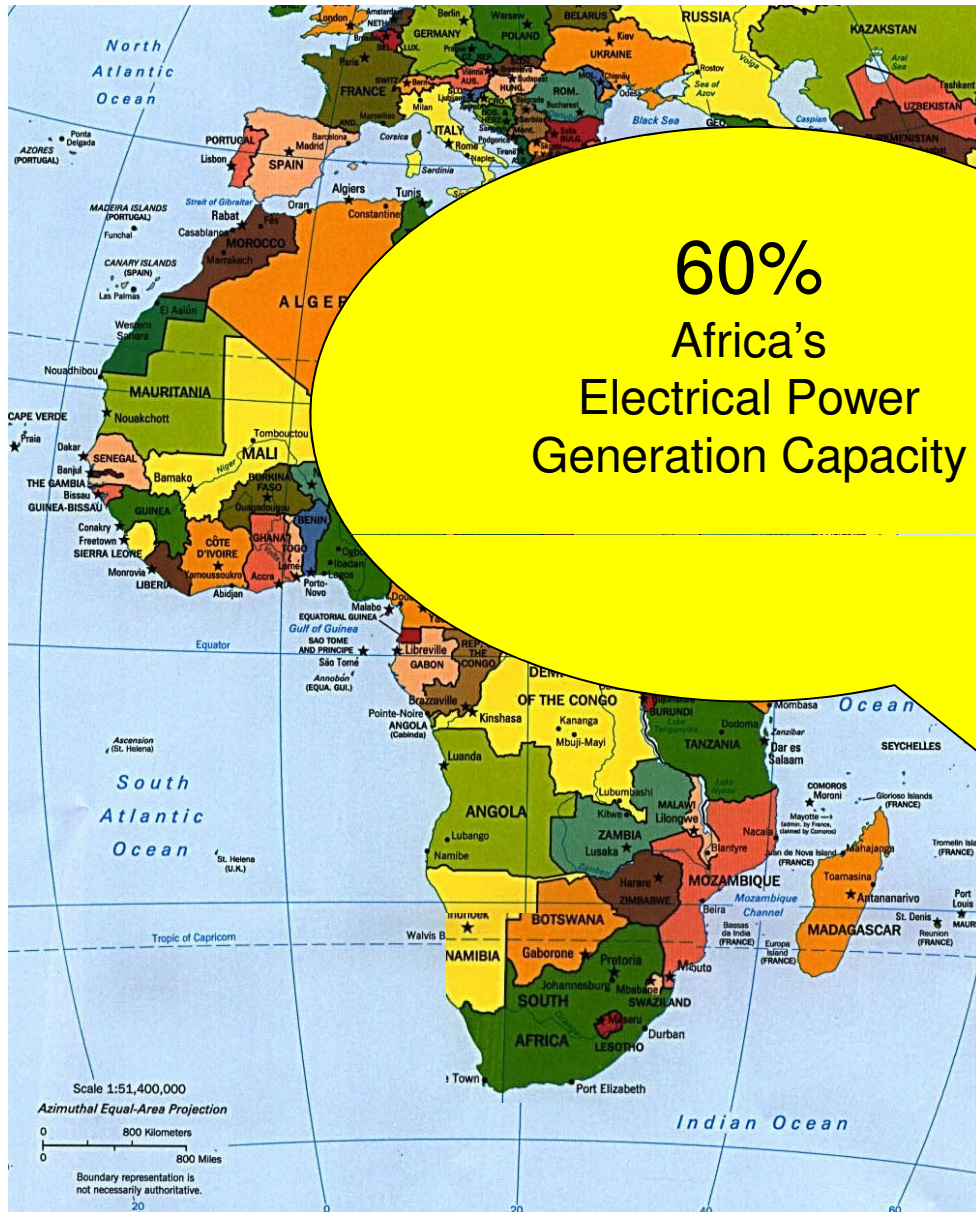
**Lisa Lyhne, Dariel Solutions**

**Tamasin Bossert, Nedbank**

**Alok Goswami, Nedbank**



# South Africa in Africa



60%  
Africa's  
Electrical Power  
Generation Capacity

28%  
Africa's  
GDP

5%  
Africa's  
Population

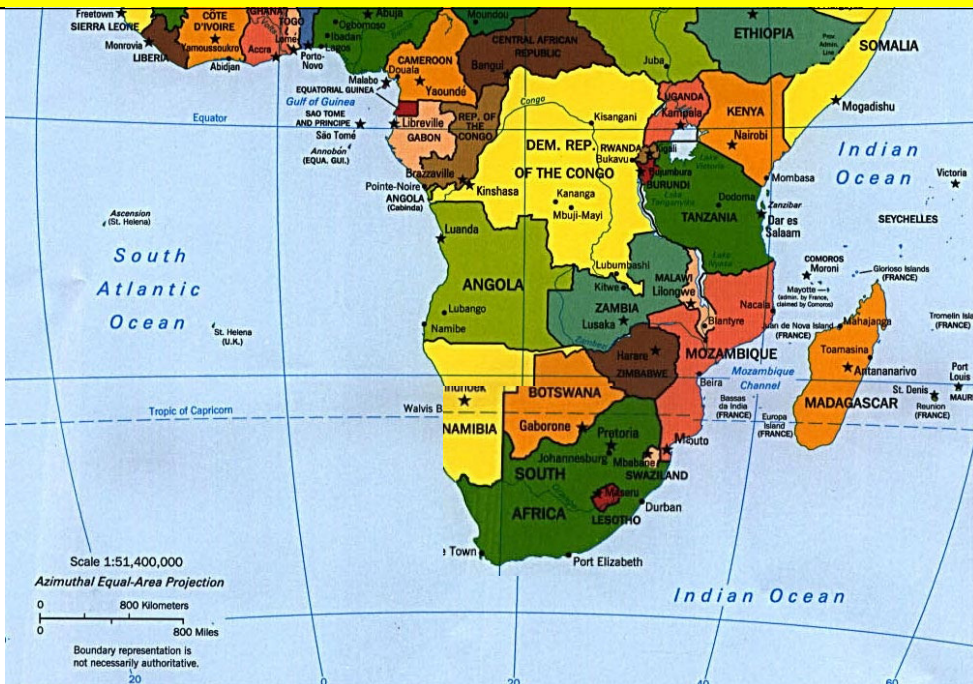
4%  
Africa's  
Land  
Area

# South Africa in Africa

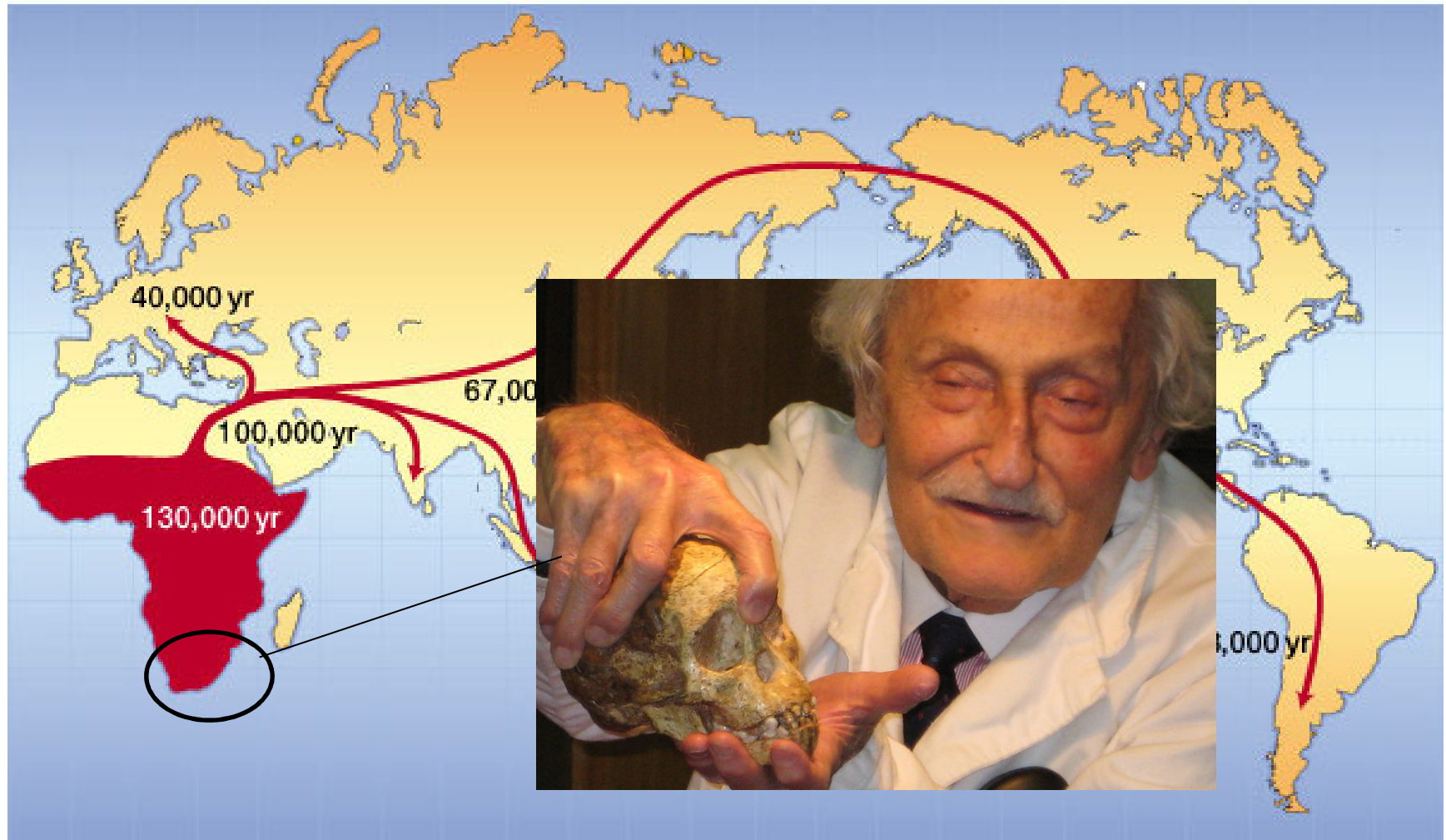


South Africa: Africa's economic giant

Highly industrialised economy founded on Mining and Agriculture



# We are all South Africans (maybe?)



# Computing in South Africa

## .. a 1-minute History

### Stage 1: 1957 to 1975 – Early Adopters



**“Computer Society of South Africa” formed in 1957**  
**- 2<sup>nd</sup> oldest in the world**



**Banks and Government Departments achieve many**  
**“world firsts” in computerisation**



**Industry, mines and utilities develop**  
**innovative automation software**

# Computing in South Africa

## .. a 1-minute History

### Stage 2: 1976 to 1994 – Sanctions and International Isolation

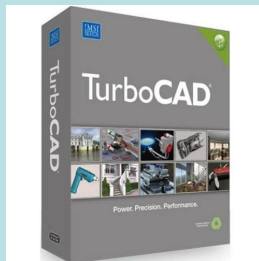


International Pressure on Apartheid South Africa grows



**UNISYS**  
imagine it. done.

Most international IT companies withdraw from South Africa



South African software companies have huge opportunities filling the vacuum left behind.

Sanction-busting and re-engineering

# Computing in South Africa

## .. a 1-minute History

**Stage 3: 1994 to today – Democracy in the “New South Africa”**



**Apartheid ends. Nelson Mandela becomes first democratically elected President. South Africa rejoins the world community**

**IBM**

**ORACLE**

**accenture**  
High performance. Delivered.

**Microsoft**

**TATA**  
TATA CONSULTANCY SERVICES

**UNISYS**  
imagine it. done.

**International IT companies return to South Africa.  
.... Followed by many others**

**arivia•kom**

**Business  
Connexion**

**South African software companies now  
face huge competition**

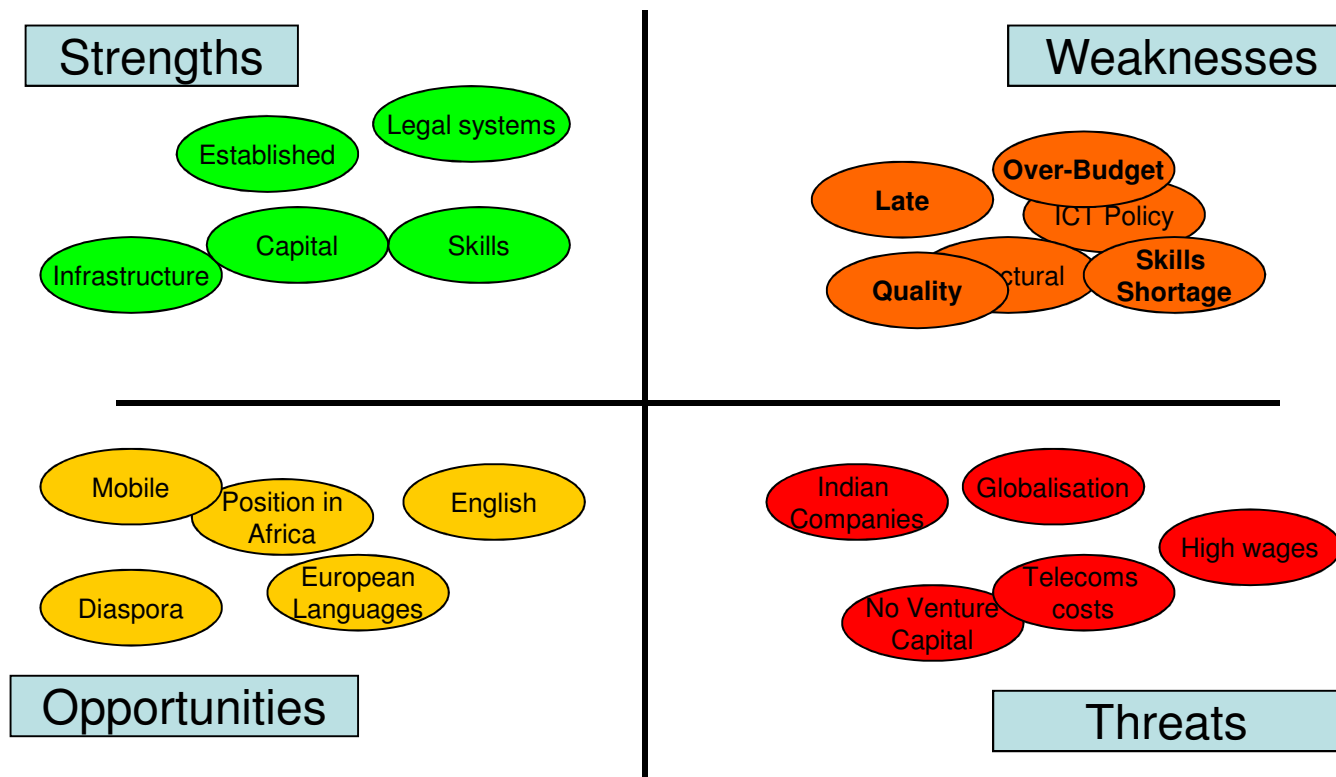
# Strategy for ICT Sector

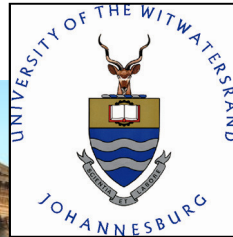
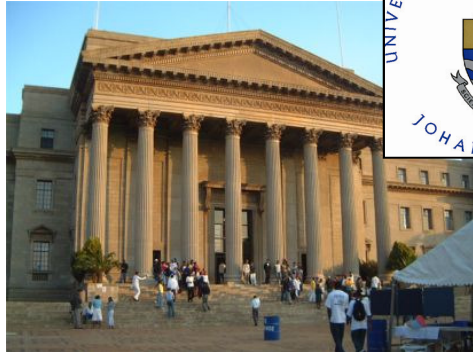


**the dti**

Department:  
Trade and Industry  
REPUBLIC OF SOUTH AFRICA

Late 1990's: Government analyses ICT Sector



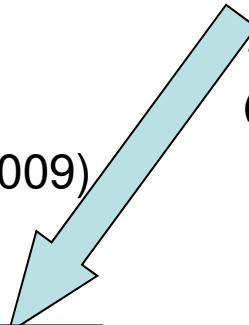


Establishes  
(2005)



**Wits University,  
Johannesburg**

Launches  
(2006 & 2009)



**CMMI®  
and  
TSP / PSP  
Adoption programmes**



**“Joburg Centre for Software Engineering”  
(JCSE)**

**Becomes Partner  
(2006)**



# TSP Adoption Programme

- A delegation lead by the JCSE visited Mexico and USA in June 2008
- Decided to launch a TSP Pilot in South Africa

# TSP Adoption Programme



# TSP/PSP Adoption Pilot

- Objectives
  - Gain experience in using TSP in “representative” software development projects;
  - Compare experience in South Africa with TSP adoption elsewhere in the world
  - Use the Pilot to train first group of South African PSP Instructors and TSP coaches

# Key role-players



Software Engineering Institute | Carnegie Mellon

- Software Engineering Institute (SEI)
  - Provide all TSP and PSP training
  - Provide experienced TSP coaches
  - Train local PSP Instructors
  - Mentor local candidate TSP coaches
  - Quality assure the Pilot

# Key role-players



- Joburg Centre for Software Engineering (JCSE)
  - Coordinate the Pilot
  - Appoint Candidate Instructors and Coaches
  - Evaluate the Pilot
  - Develop proposals for next steps

# Key role-players



- Dept. of Trade & Industry (*the dti*)
  - Secure Government funding to cover part of the costs
  - Receive recommendations for next steps based on results of the Pilot

# Key role-players



- Nedbank Group Technology (GT) Division
  - Nedbank is one of South Africa's 4 major banks
  - GT employs more than 2,000 IT professionals
  - Provided three software development projects to the Pilot
  - Nominated 2 candidate TSP coaches
  - Covered most of its own training and coaching costs

# Key role-players



- Dariel Solutions
  - Dariel is a medium-sized software development company
  - Undertakes complex and innovative projects for clients in a number of sectors
  - Provided one software development projects to the Pilot
  - Covered some of its own training and coaching costs
  - Used a JCSE candidate coach mentored by SEI

# Key role-players



- Central University of Technology (CUT)
  - Situated in Bloemfontein – 500 km from Johannesburg
  - Trains ~100 software developers per year
  - Provided one programming lecturer to be trained as a PSP Instructor
  - Aims to introduce PSP in curriculum

# Results of TSP Pilot

- TSP Pilot ran in South Africa from July 2009 to May 2010
- There was a great deal of TSP/PSP - related activity in that period
- SEI staff involved included Bill Nichols, Jim McHale, Dan Burton, Bob Cannon
- [ Bill Nichols visited us so often that he now has a South African accent 😊 ]

# Results of TSP Pilot

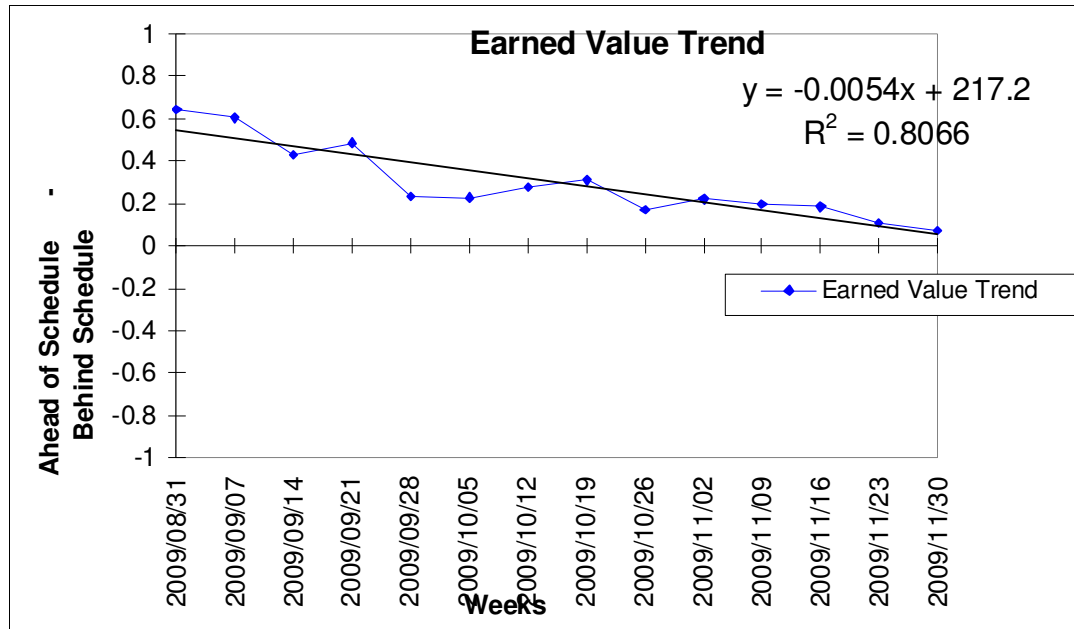


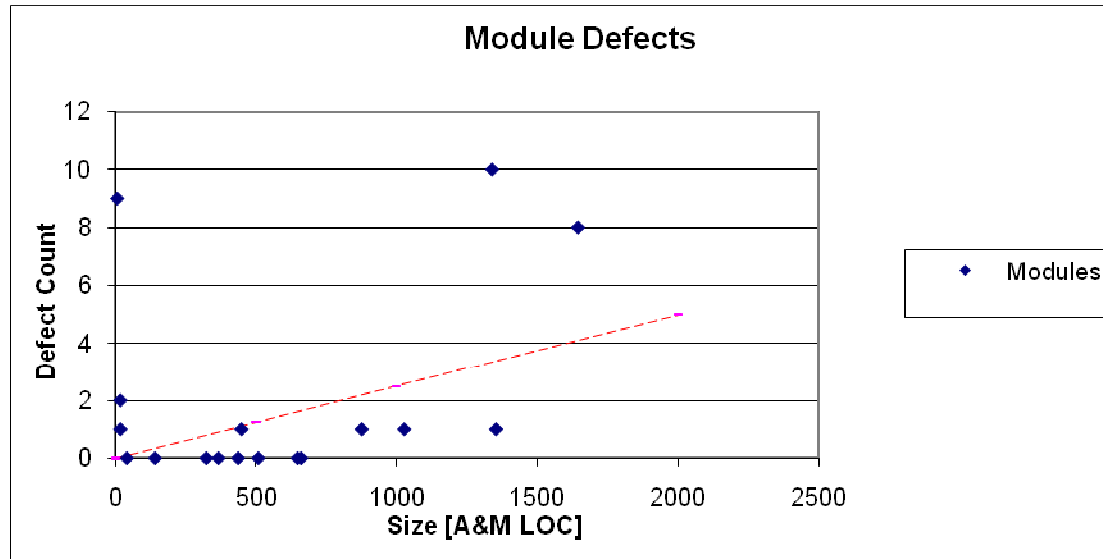
- Successfully managed the TSP Pilot
- Instructor Training – 3 certified instructors (Aug 2010)
- Coach Training – 2 TSP coaches still being mentored
- Has developed a detailed strategy for TSP adoption in South Africa – funding is being sought

# Results of TSP Pilot



- Considers the Pilot to have been a success because:
  - Availability and quality of data
  - Improved performance (better time on task; earned value)
  - Improved quality (dramatic reduction in defects detected in system test and after release)
  - Significant improvement in estimation and planning
  - Positive response from team members





# Results of TSP Pilot

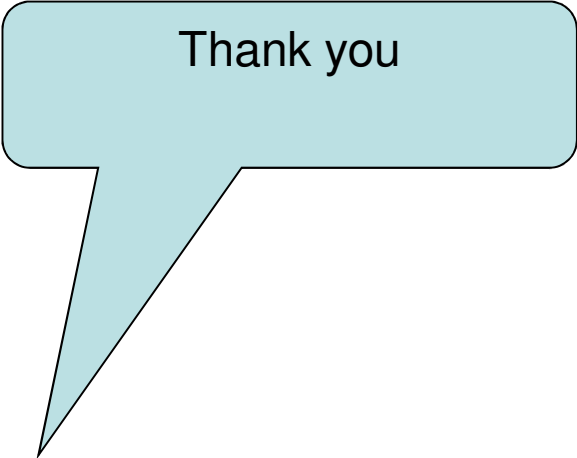


Dariel Solutions

- Pilot project used unfamiliar technology and architecture
- Difficult to retain all team members on the project (small and busy company)
- Using external coaches made coaching difficult
- Difficult for team to “own the process”
- Decided to opt for a more gradual TSP/PSP adoption approach
- This is now showing good results

# Conclusion

- All Stakeholders believe that the Pilot has been sufficiently successful to justify a rollout of TSP.
- JCSE is developing an ambitious national rollout strategy which (hopefully) will shape the future of software development in South Africa.



Thank you



Any  
Questions