THERMAL POWER-4

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IT AS AN ENABLER TO IMPROVE PERFORMANCE OF POWER SECTOR

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AGENDA

1. A few thoughts
2. Global recession
3. IT challenges as the Energy market gets deregulated
4. Case study
5. Solution highlights
6. Focus areas for IT enablement for improving performance of power sector
Some statistics and thoughts

Power outages cost the US economy in the range of $25 billion to 180 billion every year
There is a global realization that the electrical system should be capable of meeting the demand of:

1. **Reliability** (delivery of high quality power based on requirement without interruptions),

2. **Efficiency** (energy saving in the entire value chain including from the point where electricity is generated until where electricity is consumed) and

3. **Sustainability** (integrate low carbon energy sources wherever possible and set the eco-foot print)
Global recession and its impact on Indian Economy
Sensex

- 8th Jan 2008 – Touched Peak of 21,078 (closed at 20873)
- 4th Mar 2009 – Lowest in 3 years 8,427
- 8th Oct 2009 – 16933 (Down from over 17000 in previous 3-4 sessions)
- 14th October 2009- 17231 (Sensex soars to 17 months high gains 204 points on Diwali push, hopes of robust corporate earnings in Quarter 2)
- 3rd November 2009-15405
- 4th November 2009-15912
- 17th November 2009-17051 (up by 18)
- 15th December 2009-17098
- 16th December 2009: 17065 at 1 pm
- 8th January 2010: 17540
- 22nd January 2010:16860 (down by 191)
- 27th January 2010: 16,290 (down by 491)
TOI & ET

1. 30th May 2009
   - Indian economy growth 2008-2009: 6.7% (a lot better than 5.1% predicted by independent analyst)
   - 2009-2010: GDP growth 9% possible

2. 5th June 2009
   - Add 13000 MW power each year (doable and necessary)
   - Broadband coverage to reach every panchayat in three years

3. 9th October 2009-Economic Times (Finance Minister)
   - 2008-2009: GDP growth: 6.7%
   - 2009-2010: GDP growth: 6.3% expected

4. Actual GDP growth:
   - 2008-2009: 6.7%
   - Q1: 6.1%
   - Q2: 7.9%

5. Annual GDP growth 2010, Q3 likely (September-December 2010): 6%
ENERGY
ADVANCED ALERT

MORE PEOPLE ARE LIKELY TO DIE BECAUSE OF FUEL CRISIS THAN FOOD CRISIS
IT challenges as market gets deregulated
IFS, the only global management systems supplier born in Utilities!

IFS was founded in 1983 to provide management solutions to the Swedish power companies.

IFS expanded very quickly in the deregulating Scandinavian and Eastern European power markets.
Sweden
Land of the midnight sun
India as an IT Major
Political Slogan – Paradigm Shift
Matrimonial
: an example

27 years boy IT grad in computing, techno savvy seeks confident girl, Java & C++ knowledge essential. Caste, religion no bar
IT challenges as market gets deregulated
The Power of a Component Approach

Asset in focus
- Budget-driven
- Availability and cost

Customer in focus
- Competition
- Asset optimization and profit

Regulated markets
- CMMS + EAM + xEAM (Project & Service Management) + SM + ERP

Deregulated markets
- E-business + CRM + Billing
- Business Intelligence
- Integrated Network System (SCADA, NIS, etc)
- ERP-II + Smart grid
Total Solution for Competitiveness

CIS

NIS/GIS

EAM /ERP/ERP-II

SCADA
Scenario #1: power system outage

Customer complaints
Pro-Active information
Recovery information

Customer Service

Type of disturbance
Time to recover
No. of customers affected

Sales
Reports

Asset Management
Reports

Repair and Maintenance

Accounting

Substation Automation
Real-time information
Disturbance records

Control Center
Disturbance information
Disturbance report

Fault statistics
Spares

Work order
Work report

Engineering
Asset records
Disturbance report
Case Studies

PKE, Poland (GENCO, thermal)
PKE (Poland)

Południowy Koncern Energetyczny (PKE) is the biggest electricity supplier in Poland

17% of the domestic electricity market and 16 percent of the local thermal power market.

PKE has 6,800 employees

1. Jaworzno III Power Station (electrical 1,635 MW, thermal 464 MWt)
2. Łagisza Power Station (electrical 840 MW, thermal 425 MWt)
3. Łaziska Power Station (electrical 1,155 MW, thermal 196 MWt)
4. Siersza Power Station (electrical 763 MW, thermal 36.5 MWt)
5. Halemba Power Station (electrical 200 MW, thermal 58 MWt)
6. Blachownia Power Station (electrical 165 MW, thermal 174 MWt)
7. Katowice Power Station (electrical 135 MW, thermal 693 MWt)
8. Zespół Power Station (electrical 162.7 MW, thermal 495 MWt)
Objectives

- Improve PKE to be able to face competition after the deregulation of the energy market and to increase the value of the company.
- Implementation of more efficient management methods were needed to facilitate cost reduction, improve credit rating and increase company potential. Increase budgetary controls to allow company growth to adapt to a new market.
- Improve management structures to provide an instant overview of the company status.
# ERP system at PKE

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**IFS Foundation1 V5**
The Project Manager can easily monitor the overall KPI (Key Performance Indicators) in the project.
Project- and project status

Top Issues in project

Search documents,
Cost Performance Indicator displays actual project costs compared to scheduled.

Status on subprojects regarding time and cost yellow = delayed subproject.
These two activities are delayed.

Action plans are attached to delayed activities to ensure that action will be taken to handle the deviation.

Status on activities in subproject panel regarding time and cost.
Alerts

Portal is configured to display only measures where indicators are red.

Current view of the organization. How much has each Profit Center sold so far in this month?

Current view of the organization. How many orders do we have right now and how does that compare to history?
Energy Solution to improve Management & Productivity?
IFS ENERGY SOLUTION

Expansion Projects –

- Effective Planning, Monitoring and Execution of Projects
- Controlling time and cost overrun of Projects through Exception Based Project Monitoring
- Asset Life Cycle Management
IFS ENERGY SOLUTION

Operation and Maintenance

- Increased availability through incorporation of Best Operation & Maintenance Practices like RCM (Reliability Centered Maintenance), TPM
- Improved spare parts management system
- Reduction in cost of operation
- On-line real time information through integration with SCADA system
- Increase predictability of the plant

Integration (best of breed billing, SCADA, GIS..)

Environmental management

EIS

- High quality timely information for decision support & proactive management

Management dashboard
Smart grid

1. Does a “smart grid” deliver electricity from suppliers to consumers supported by a two-way digital technology?
2. Does a “smart grid” help in optimizing the total cost of ownership of energy?
3. Does a “smart grid” help in reducing the “societal cost”? 
1. Can a “smart grid” be termed as an intelligent modern electric network that helps in addressing the dual issues of energy independence & global warming?

2. Can we say that the “smart meters” are just a small sub-system of a “smart grid”? 

Smart grid
Summary

1. IT enabled initiatives can improve productivity and performance of power sector

2. Investment required is insignificant compared to total life cycle cost

3. Expansion projects can be managed effectively

4. Existing facilities can improve O & M

5. Smart grid initiatives will require sophisticated IT infrastructure
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