

# SAP Mining & Metals Forum

## Darmstadt October 2014

Garry Tuckwell

Global Head, Natural Resources



# Wipro Natural Resources

Who we are...



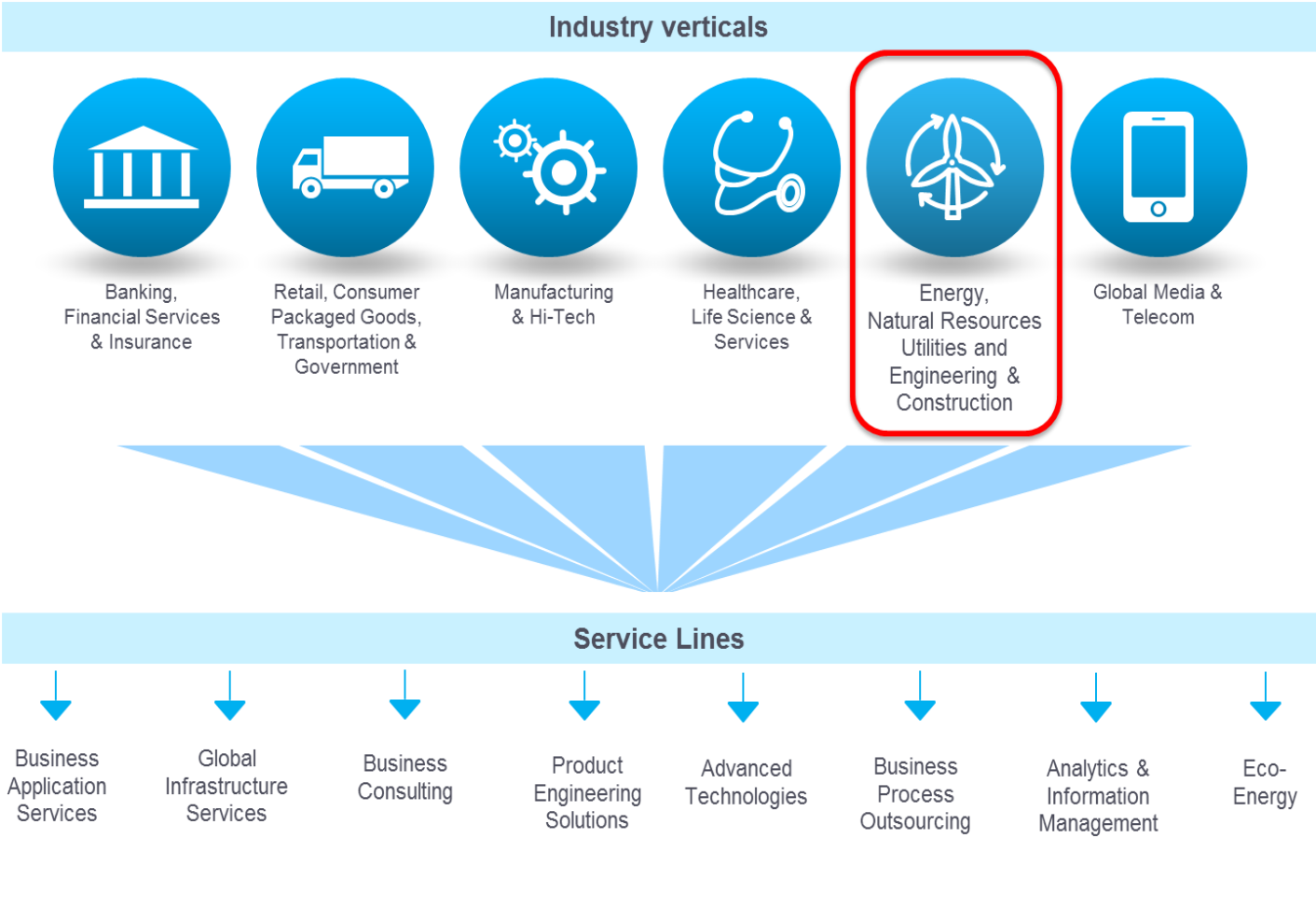
***Wipro Today..***



\*Recognized as 'One of the Most Ethical Companies' by Ethisphere Institute 2014  
Winner of the CIO-100 2013 Award  
#2 in Newsweek Ranking of Global 500 Green Companies. Ranked #1 in IT sector Globally

*\*\*Figures based on Q4 results 2013-14 for Global IT Business (IT Services and IT Products)*

***Our Structure***



Energy, Natural Resources and Utilities

Industry Experience

12+

Years Since the formation of a practice dedicated to the Energy & Utilities Industry

75+

Global Clients in Energy & Utility

\$850 mn +

Annualized Revenue

8900+

People dedicated to the delivery of services



Strategic Relationships

- Global Mining companies
- Integrated O&G companies
- Oil field services companies
- Regional & National O&G
- Municipal Utilities
- Independent System Operators
- Energy Retailers



Functional Expertise

- Work and Asset Management
- Regulatory Compliance
- Environment Health and safety
- Exploration and Production
- Energy Trading, Refining & Marketing;
- Shared Services

# The Digital Mining rEvolution

2 years on... moving from Revolution to Evolution

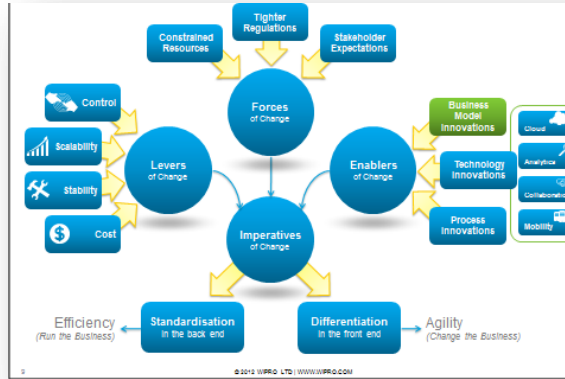




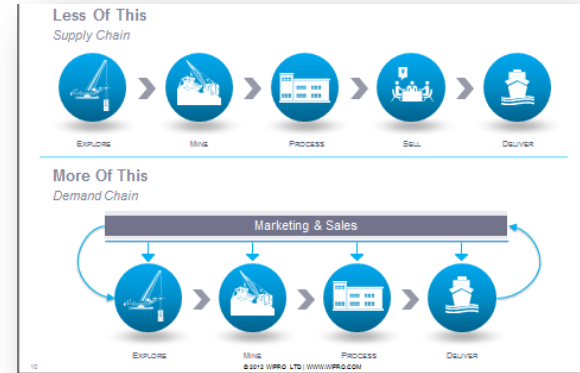
## Revolution

### The Digital Mining rEvolution

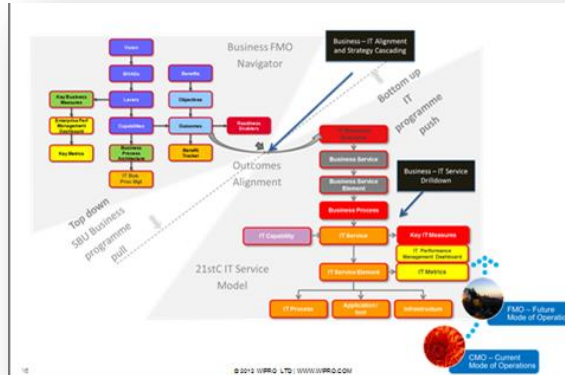
A recap of our Digital Mining POV from 2 years ago...



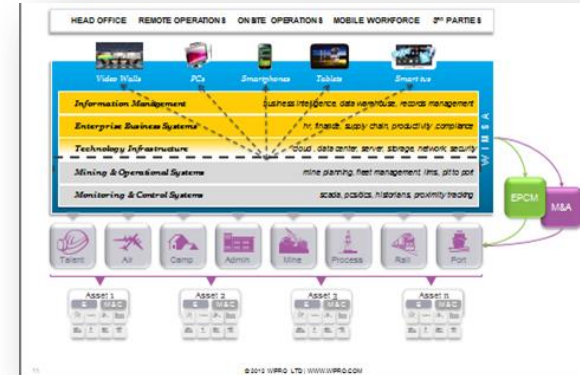
## Market Driven Mining



## Business Challenge not IT



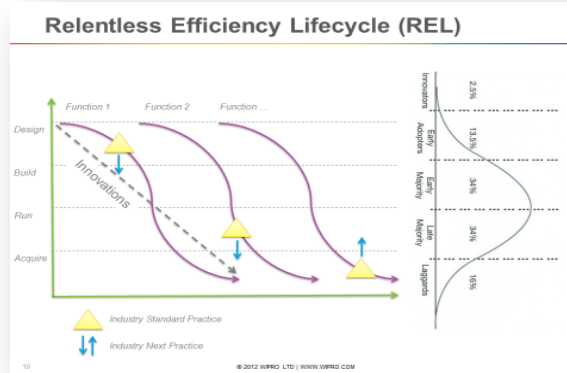
## But, Technology Matters



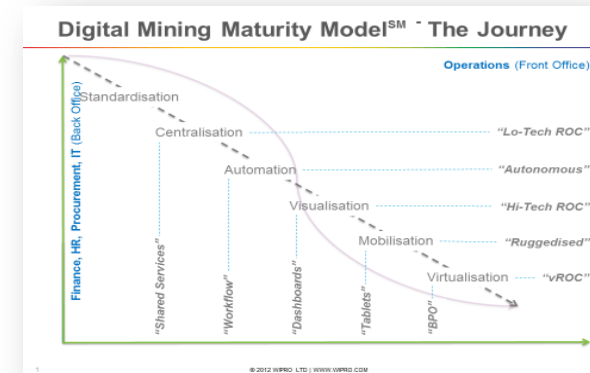
## Efficiency Lifecycle

### The Digital Mining rEvolution

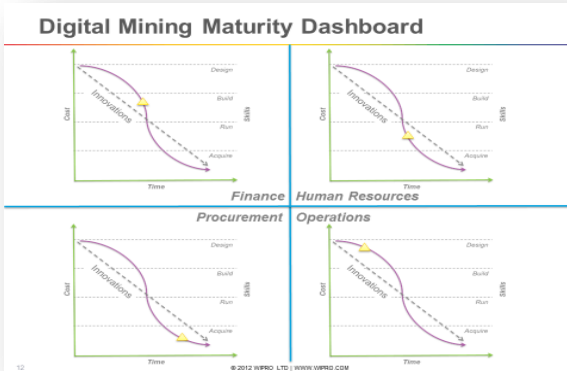
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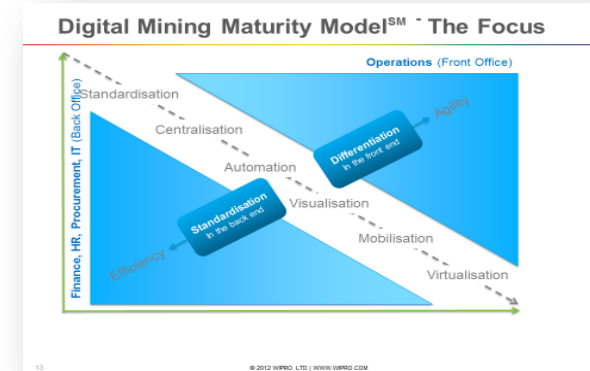
## Digital Mining Maturity Model



## Different Pace



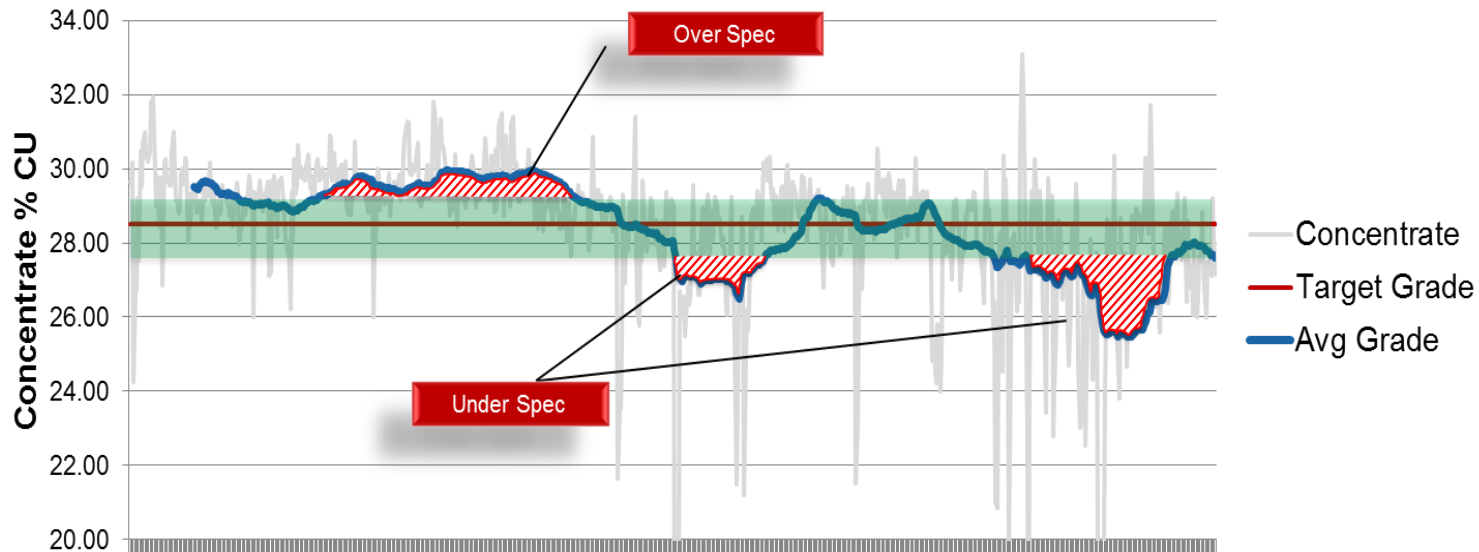
## Dual Pronged Approach





## The Ore -Body “Balance Sheet”

... is gaining traction as savvy investors now look to a management teams ability to convert assets to wealth. **Poor management of resources and reserves will directly impact company valuations** as this “OBBS” trend continues.

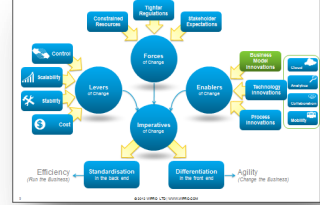


\*Figures obtained from a QLD copper mine

- Under Specification
  - Off-spec delivery penalty
  - Cost associated with time & effort rectifying fault
- Over Specification
  - Opportunity loss due to lost revenue owing to supplying grade quality exceeding agreed grade
  - Possible off-spec delivery penalty (depending upon contract & material)
  - Cost associated with time & effort rectifying fault

## Industry Examples of the business model changing

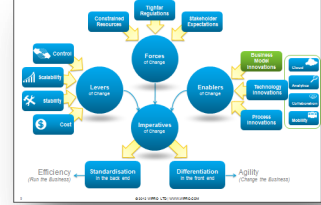
*BHPB Perth Remote  
Ops Centre (iROC)*



<http://www.itnews.com.au/News/348721,bhp-billiton-opens-perth-remote-control-centre.aspx>

# Industry Examples of the business model changing

Rio Tinto's  
Processing Excellence  
Centre (PEC) in  
Brisbane



[http://www.riotinto.com/media/media-releases-237\\_10054.aspx](http://www.riotinto.com/media/media-releases-237_10054.aspx)

## Industry Examples of the business model changing

Roy Hill Iron Ore  
Demand Planning  
Unit in Perth



Says Mike Lomman, General Manager Demand Chain, Roy Hill: "We have little room for error. The Demand Chain team has been designed to **look at the business holistically**, to mitigate risk and to respond to unforeseen events when they occur - all before the mine is built.

"We have spent a lot of time **planning an organisation that values integrated operations knowledge** and how we can then apply that knowledge to rapidly drive innovation - not only in how we operate but the technology that we use. "

Read more at <http://www.ferret.com.au/c/schneider-electric/schneider-electric-to-deliver-resource-to-market-simulation-and-optimisation-to-roy-hill-iron-ore-n2511136#Bu9Wqw5xg6ciJhW.99>



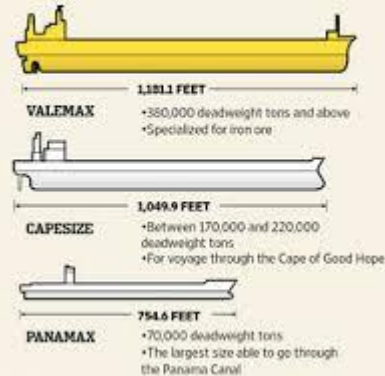
## Industry Examples of the market driven – one way or another

### Vale's Malaysian Super Port



#### Heavyweights of the Sea

Vale's new Valemax ship is the world's biggest iron-ore vessel. A comparison with other classes of dry-bulk cargo ships by capacity and length



Source: Vale SA

The Wall Street Journal

#### VALEMAX ROUTES TO ASIA



Source: Vale

Copyright Stratfor 2014 www.stratfor.com

<http://www.e-mj.com/features/2832-vale-creates-super-hubs-for-iron-ore-logistics.html#.VC4i4fmSwWl>

# The Digital Mining rEvolution

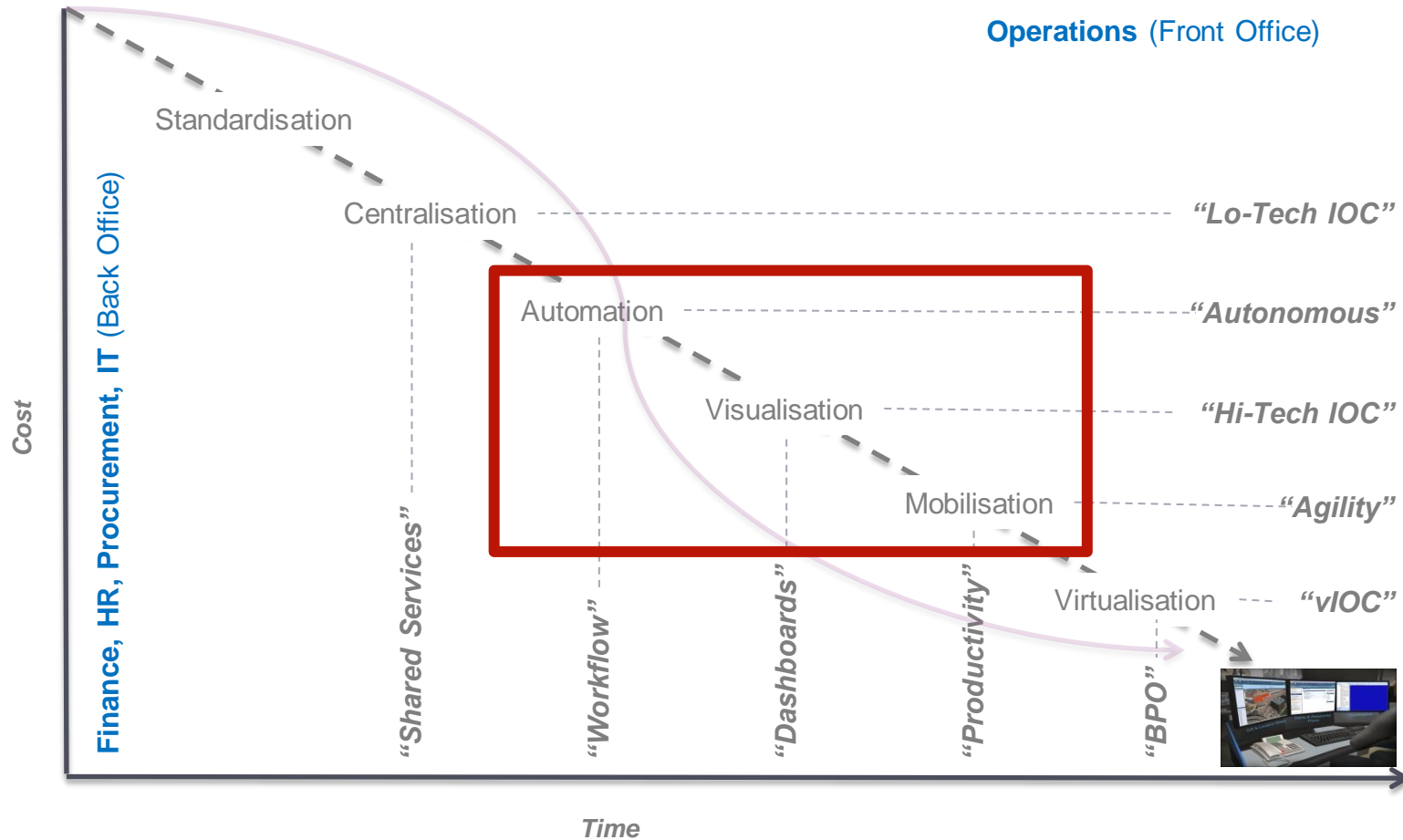
What's Next..





**Digital Mining  
Maturity  
Model<sup>sm</sup>**

Wipro Natural Resources believe there are six steps to the Efficiency Lifecycle and that these steps can be taken at different times and at different speeds across the various Back Office functions and the Front Office operations. One size will not fit all...

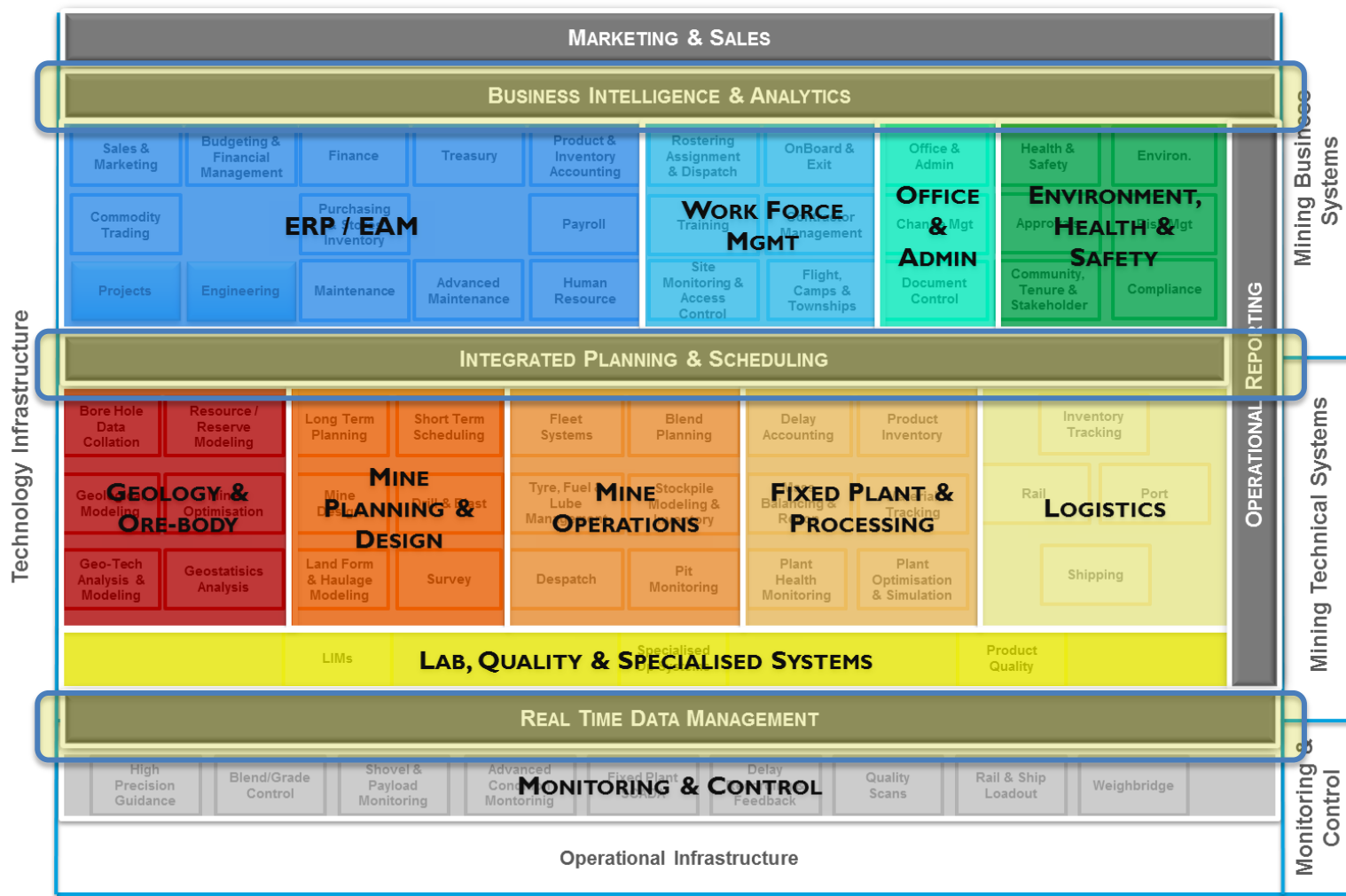


## The Game Changer...

The **Integrated Planning and Scheduling** capability is going to be the catalyst to change the business model.

The “Ore Body Balance Sheet” will demand more “Plan the Work, Work the Plan” discipline and the IP&S capability will provide end to end oversight to achieve this.

New facilities and aligned KPIs are sure to ensue.



**Integrated  
Operations**

*Cross Discipline  
Collaboration*

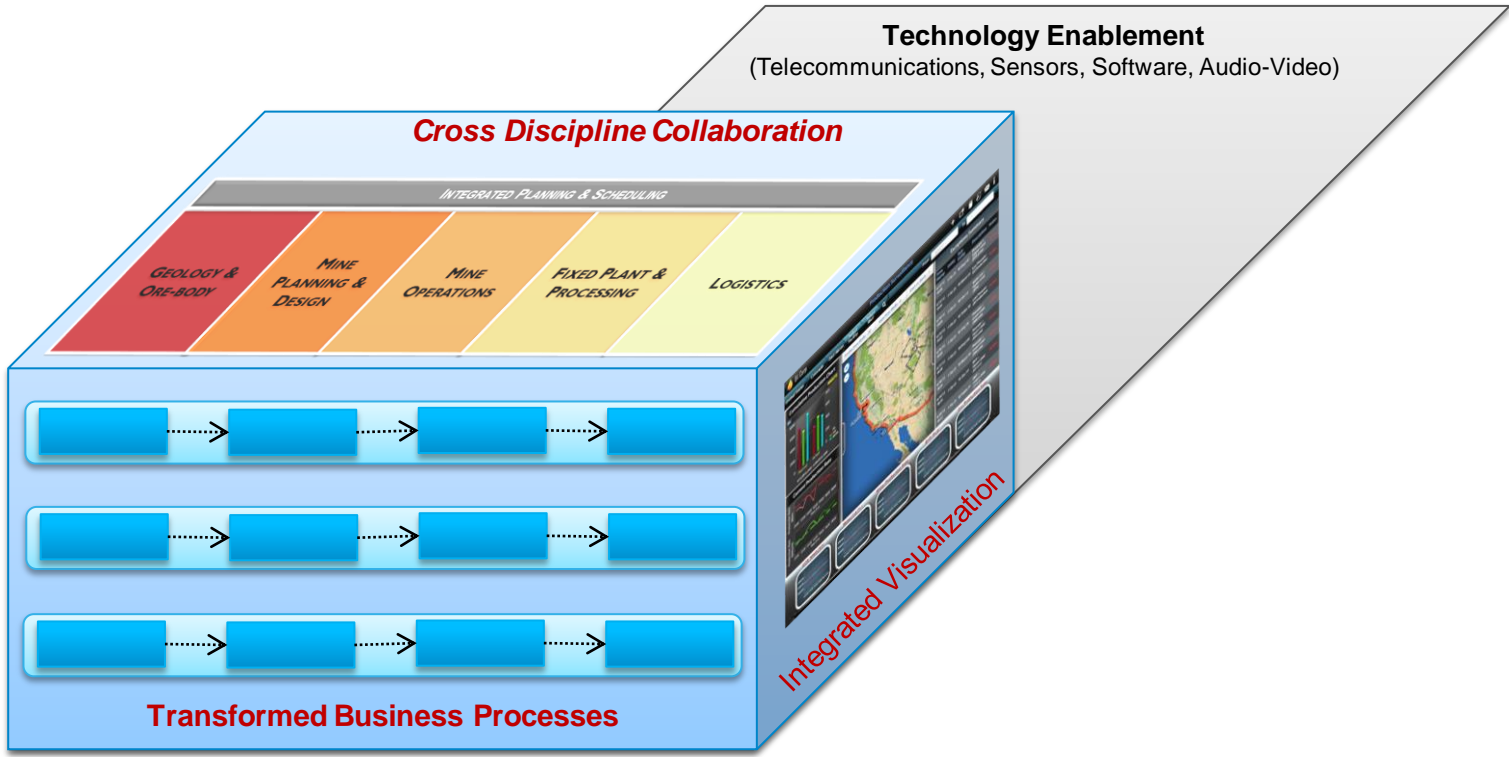
*Tightly Coupled  
Dynamic Planning  
Horizons*

*One View*

*Transformed  
Processes*

*Technology  
Enabled*

**Digital Mining - Integrated Operations**



## Extending your SAP Enterprise

No silver bullet

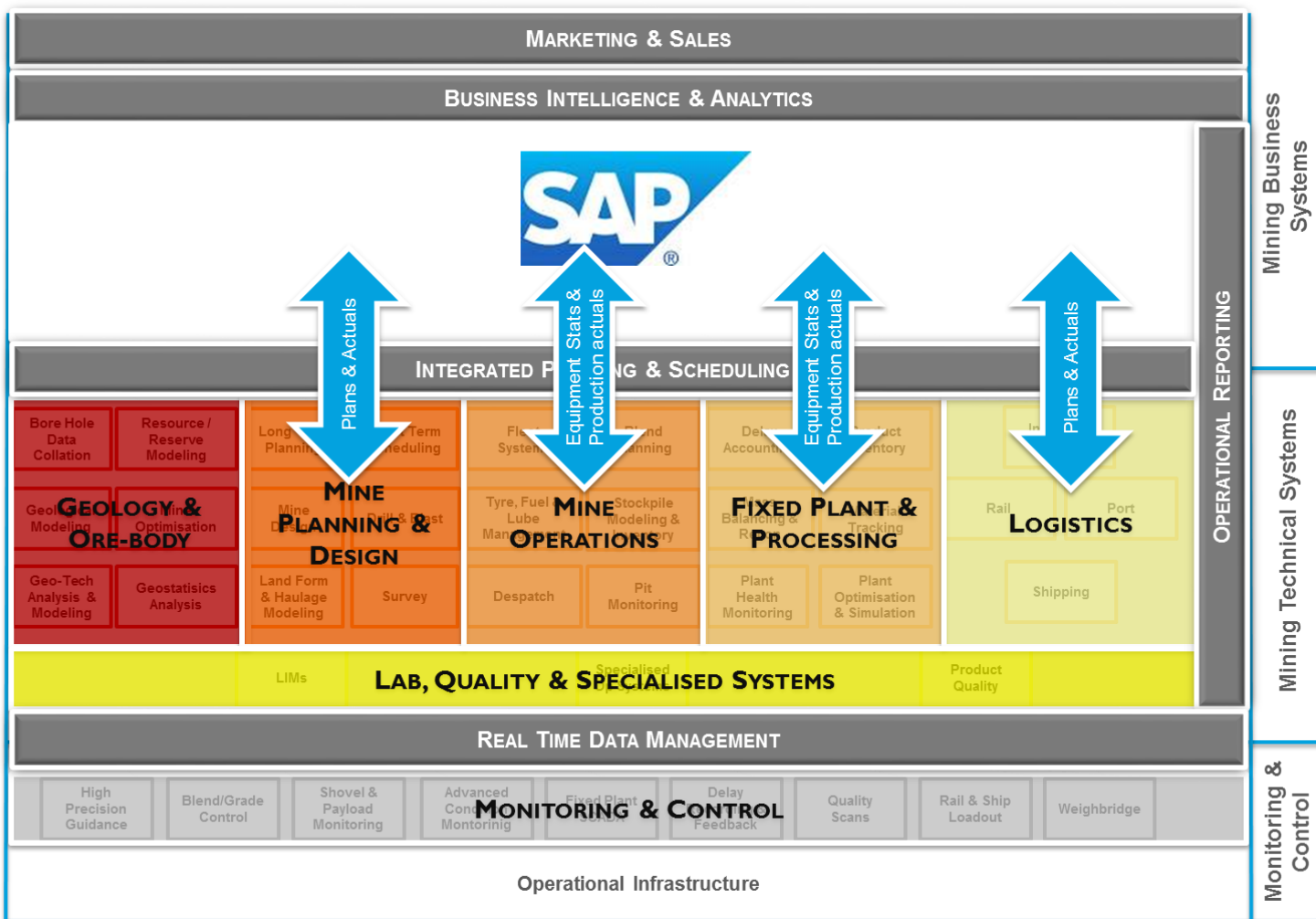
Ever changing  
landscape

Data is most  
important asset

Capturing data is  
step one

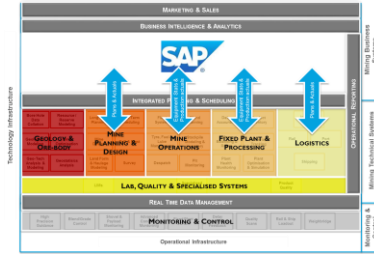
Contextualising  
data is **The Key**

Technology Infrastructure



## The Journey

*Integration of vendor packages to harmonise information is the only option*



- ☐ Develop and implement systems and processes that **span the total continuum** of a mining operation from geological data management, through planning, scheduling, process optimisation, asset allocation and monitoring, and logistics and handling, to the point of sale
- ☐ The system must provide **the rigidity to control** reporting and operational risk but should have the **flexibility to readily trial and adopt** bleeding edge **innovation** and evolve so that it is always leading edge
- ☐ It should **be intelligent** and use all the data available within the continuum to **continuously re-optimize** the process. It should incorporate AI and predictive learning to continually improve the understanding of the continuum and therefore **more accurately predict** behaviour

STANDARDISED

AMORPHOUS

INTELLIGENT

Digital Mining *is now* becoming mainstream

Market Leaders are *maturing their approach*

Efficiency Lifecycles *will still* force others to follow

The Business Model *is* changing

*Alignment* on the Future Mode of Operation is critical

Integration of vendor packages to harmonise information is *the only option*

The next decade will be an exciting time for our industry



**Thank You**  
**Don't Get Left Behind**  
Digital Mining – Catch Me If You Can



# Don't Get Left Behind

Digital Mining – Catch Me If You Can





# Thank You

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