



be (t)here

Collaborate Across Multiple Facilities

Honeywell

Remote Collaboration Centers (RCC)

Mike Sinclair Oct 2012

Codelco – Santiago Chile

Honeywell



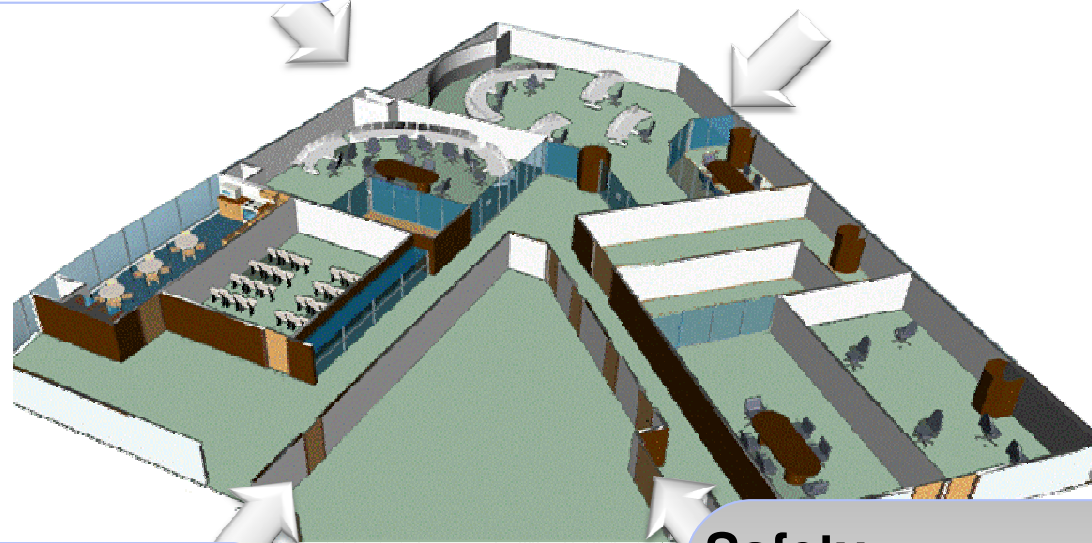
Drivers for Remote Collaboration Centers

Productivity & Costs

- **Increasing competitiveness**
 - driven by performance analysis & process optimisation

Staff Retention & Hiring

- **Knowledge building & retention**
 - Skilled people are in demand



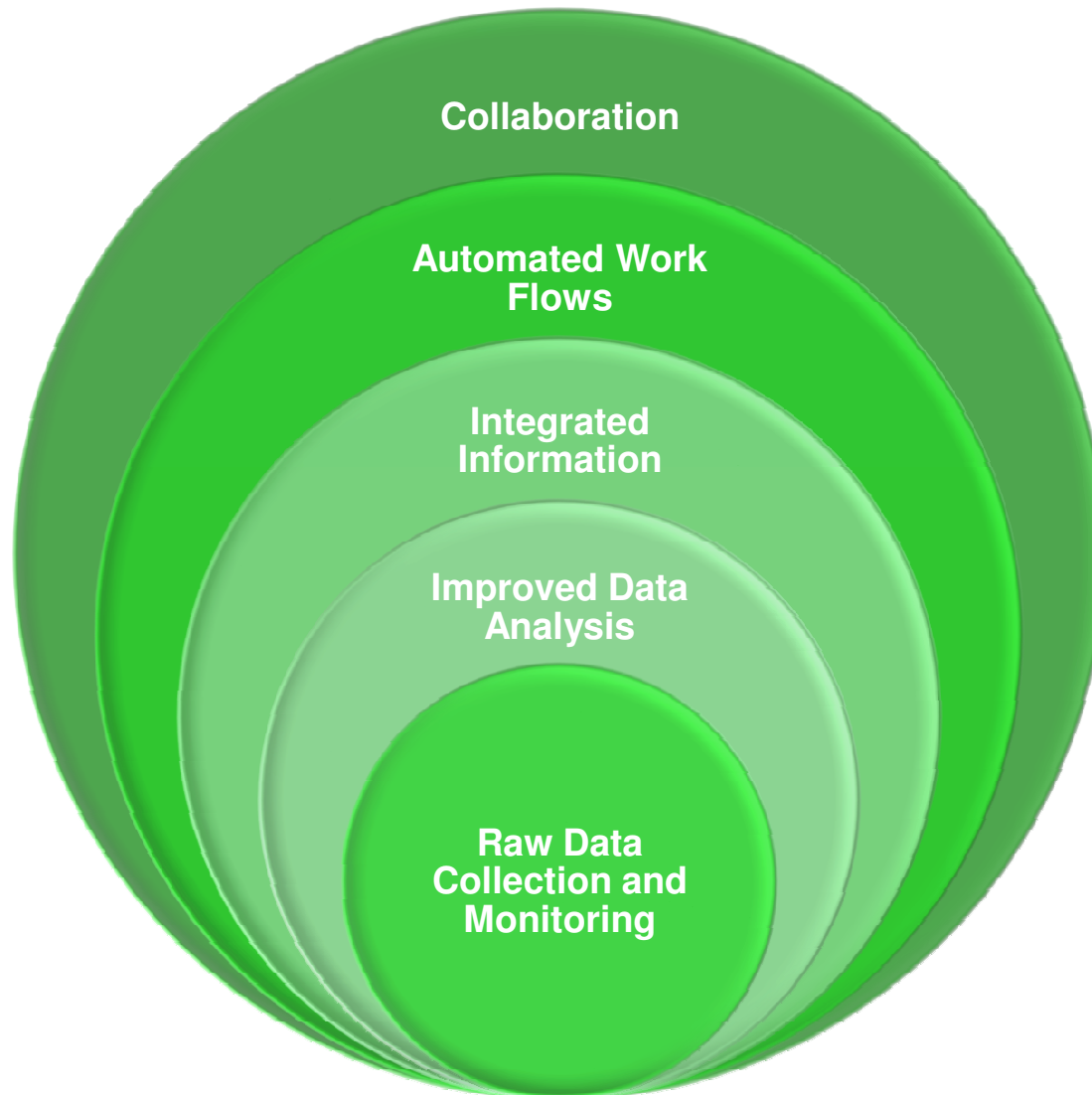
Integrated Operations

- **Improved results**
 - via collaboration & coordination

Safety

- **Reduce incidents**
 - less people on site
- **Safety Compliance**
 - better monitoring & incident management

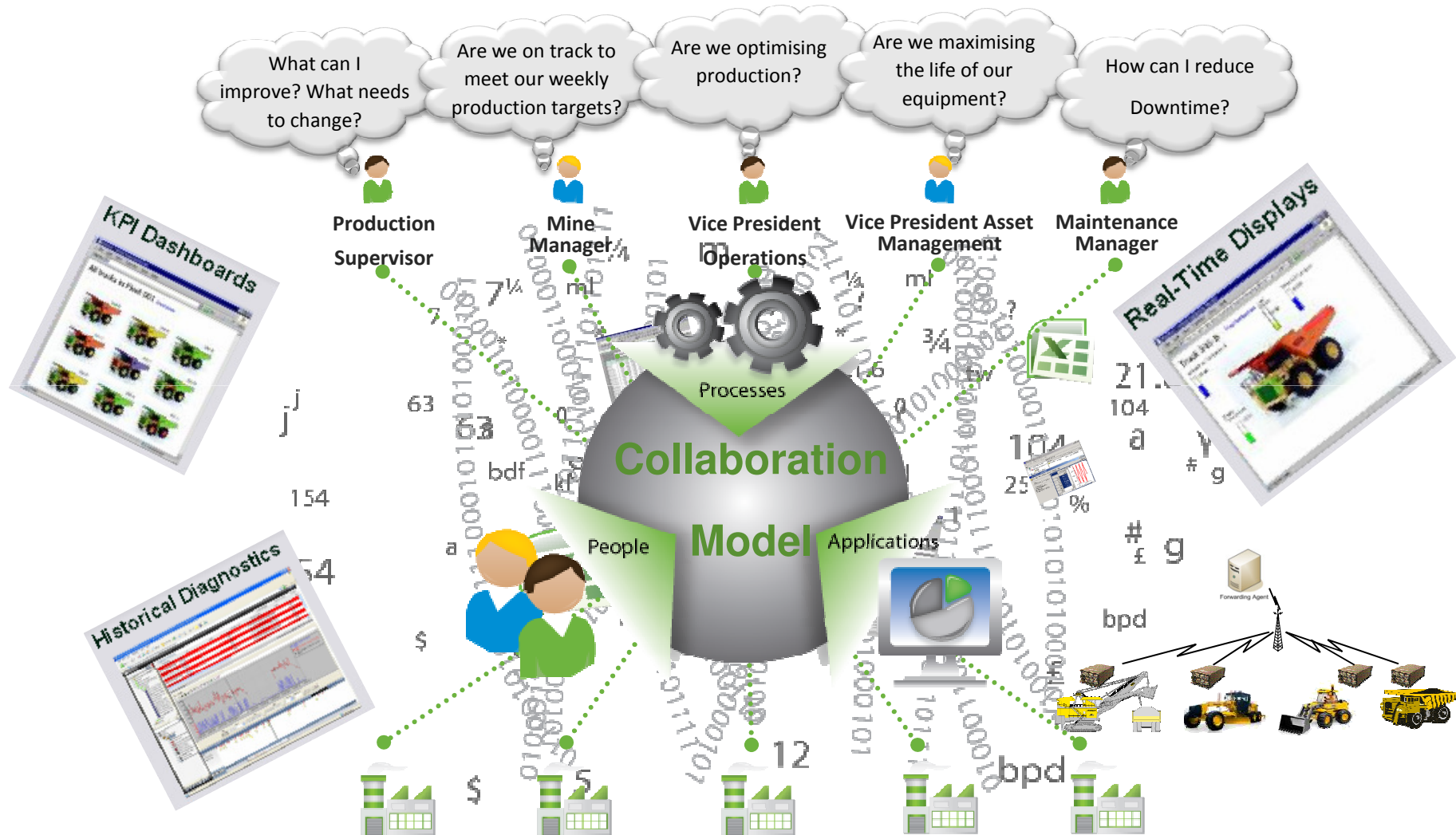
Vision – Then A Phased Approach.....



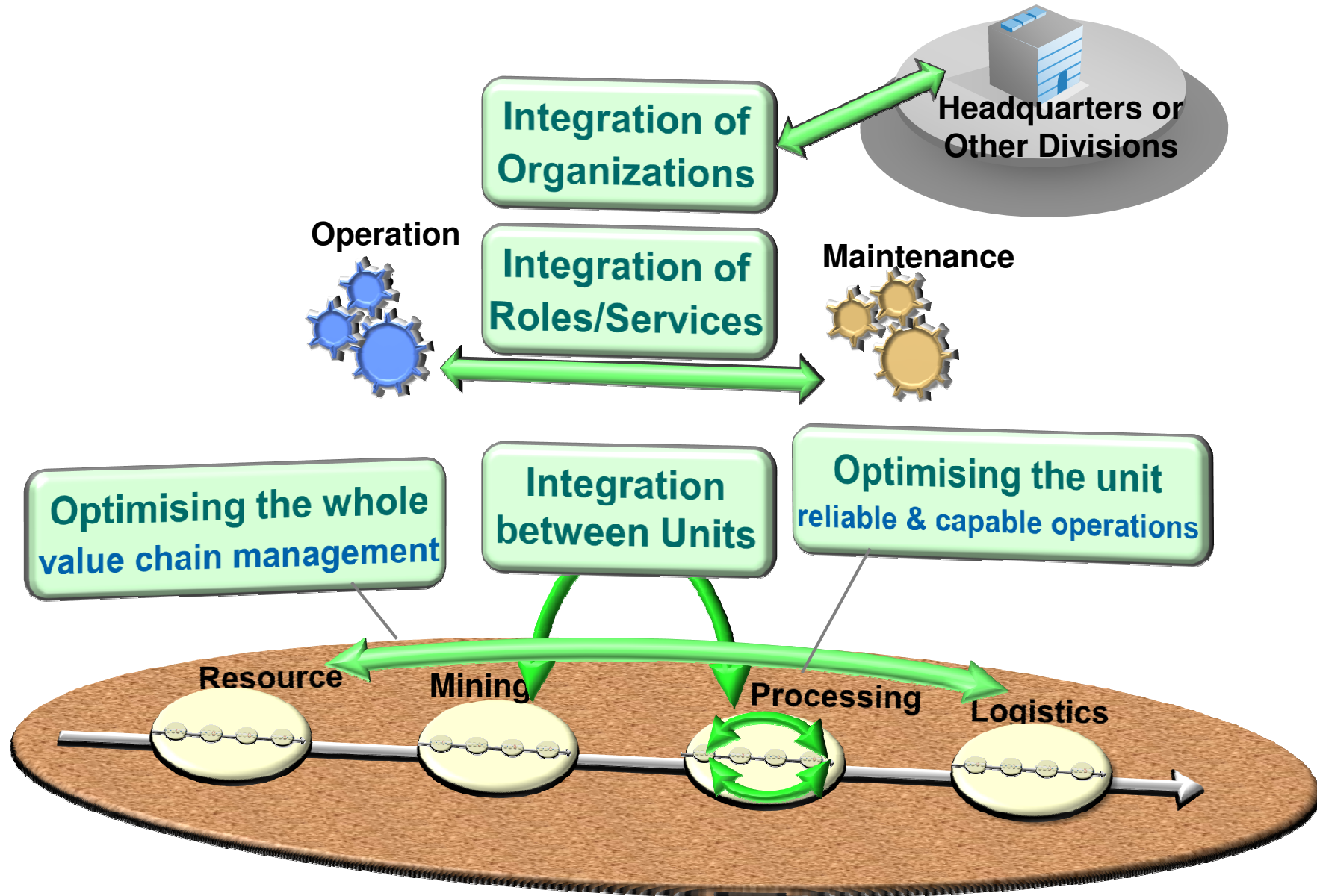
Resulting Benefits:

- Significant additional benefit achievable through Business Transformation
- Requires balanced focus on People, Process and Technology
- Remember – it's a program not a Project

Bring the Fragmented Solutions together



Broader Vision of Collaboration Centers



Examples of Centers Being Deployed Today

Remote Operations Center

Control plant remotely

- **Improve staff retention & safety**
(Wintershall Oil Platforms, Chilean miner)



Wintershall Remote Control
(18 platforms)

Remote Logistics Management Centers

Track & manage logistics of trains & ports from central location

- **Optimize inventories, just-in-time manufacturing**
(Rio Tinto Pilbara, Vale Iron Ore)

Remote Collaboration for Support

Centralized Asset and process monitoring

- **Higher level of support, leverage experts**
(P&H, Peabody Coal, Shell Oil, Detroit Edison, others)



Shell Active Monitoring (New Orleans)

Remote Center for Deployment and Support

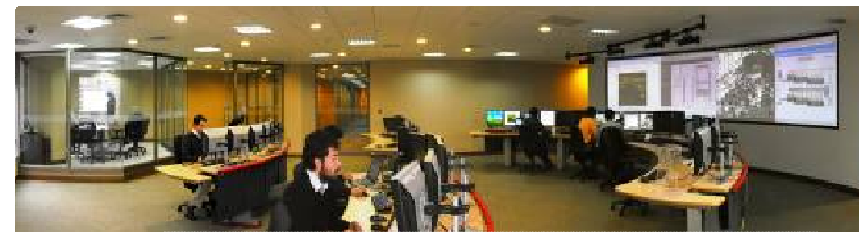
Centralized engineering, development and staging centers, support

- **Do more with less staffing** (Alcoa, Codelco)

Integrated Operations Management

Coordinated mine & plant operations, planning & support (single site)

- **Improve results thru coordination & collaboration**
(Codelco Ministro Hales, Codelco Andina Ops Mng. Cntr, Freeport McMoRan Morenci)



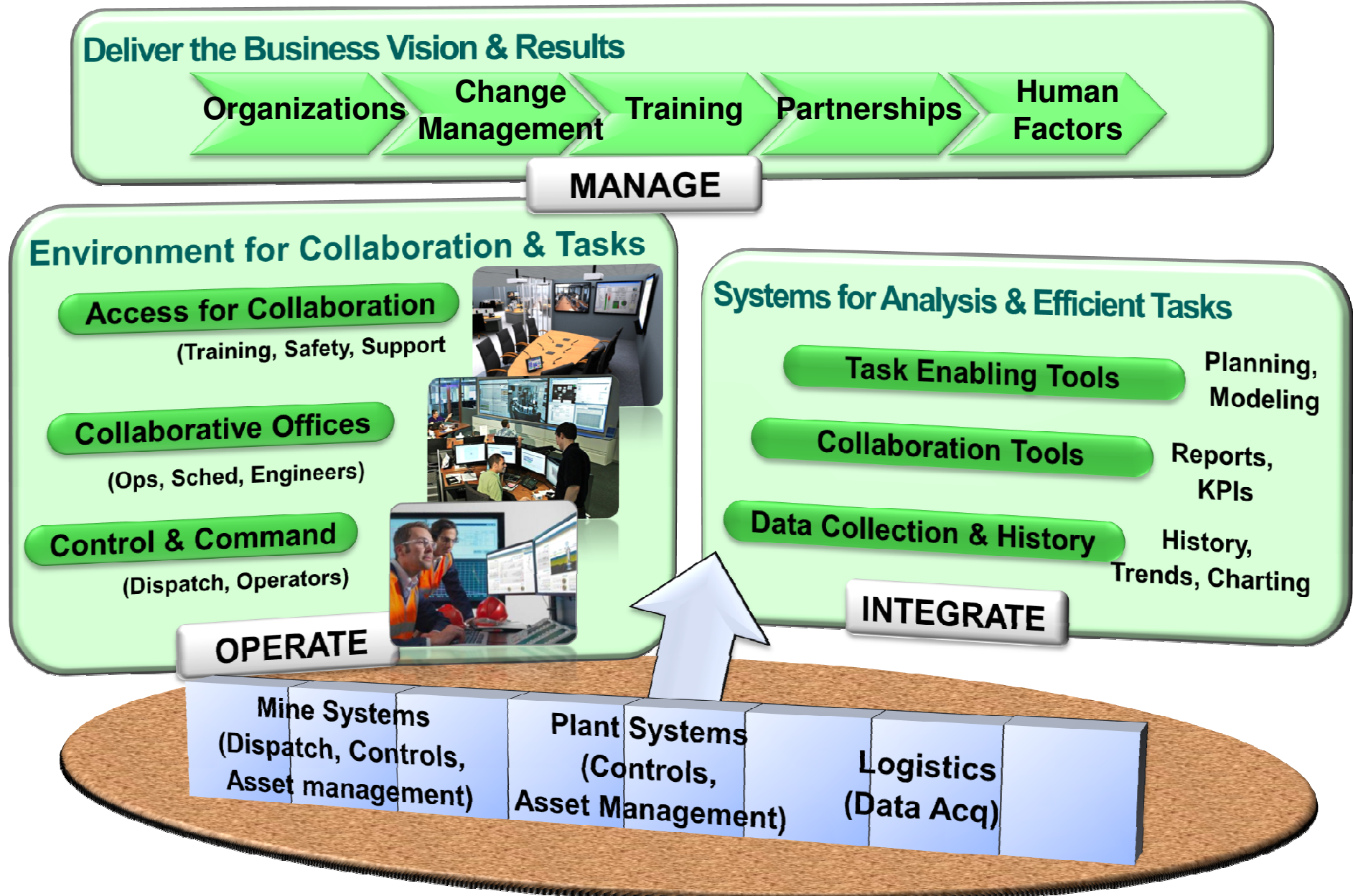
Codelco Deployment & Support (Santiago)

Requires Many Components to be Effective



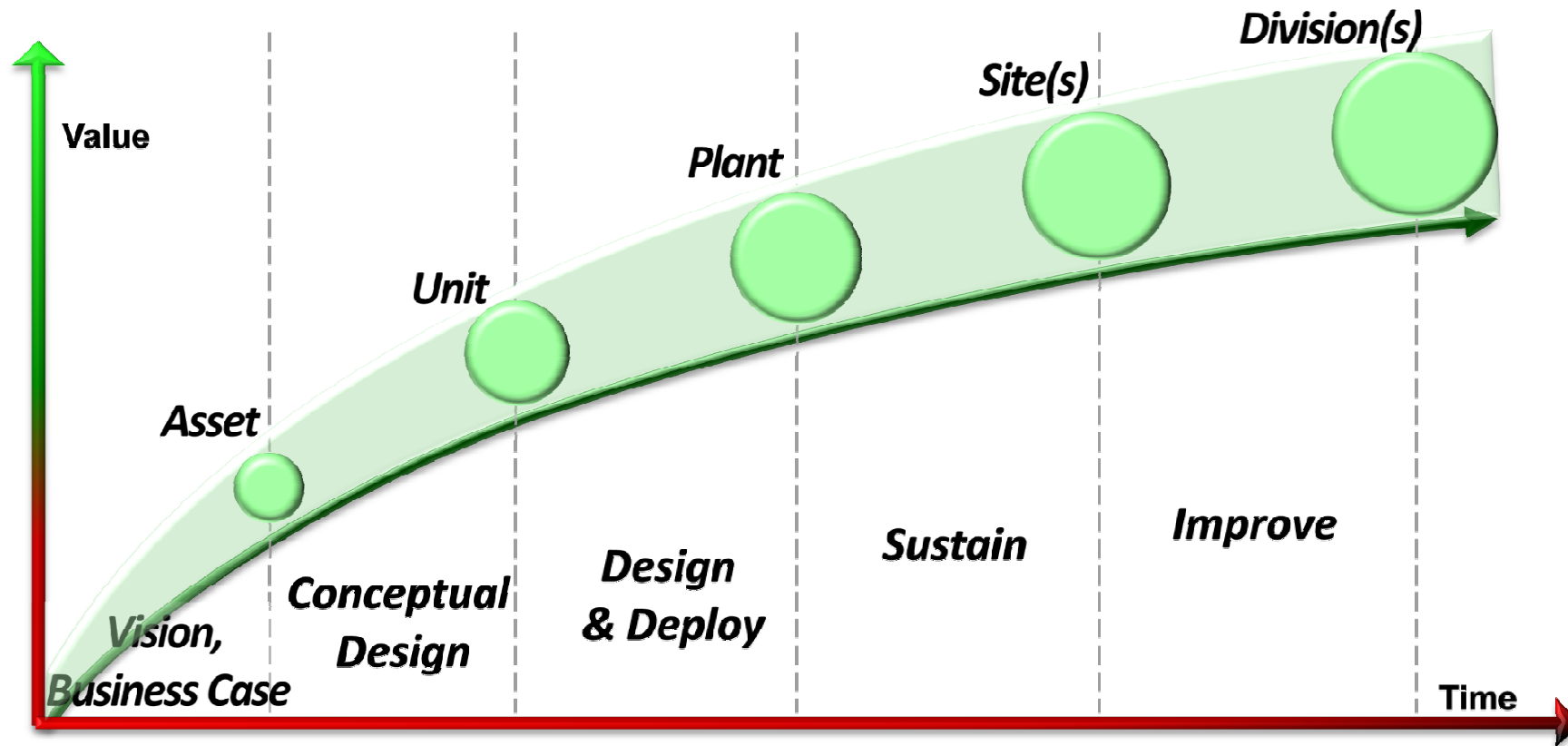
Technology & Common Work Spaces are Not Enough

Operationalizing Concepts to Champion Change



Attaining a Collaborative Work Environment

Honeywell



- Demonstrate Early Success
- Breaking Change into Smaller Steps
- Encapsulating Knowledge and Unleashing New Learnings

Leads to Broader Organizational Alignment

Future Trends in Remote Collaboration Centers

Improve Competitiveness
 thru automation &
 analysis solutions



Paradigm Changing Trends

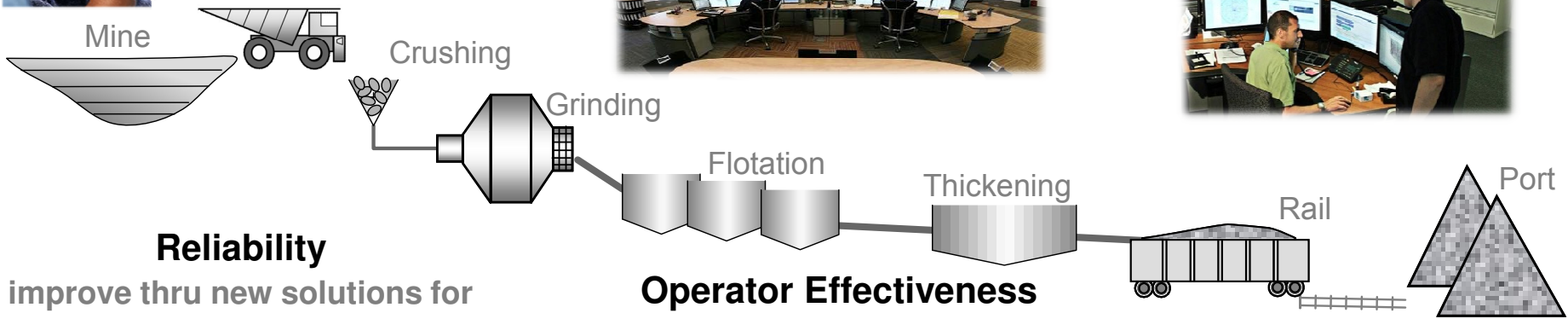
**De-Manning Operations
 (Remote Operations)**

Relocate site staffing to improve performance, safety, staff retention



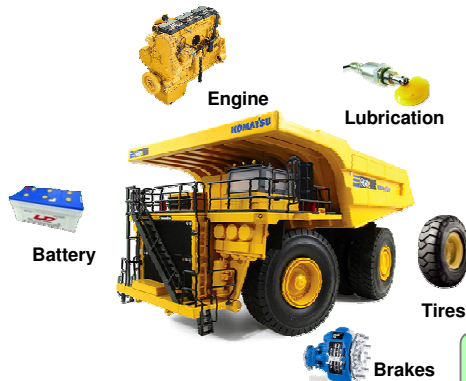
**Remote Collaboration
 (Remote Support)**

Active analysis by experts; centralized & distributed



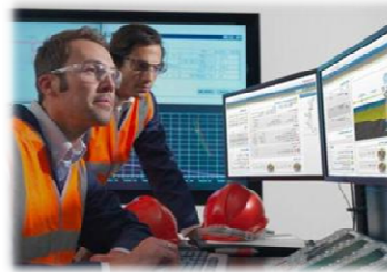
Reliability

improve thru new solutions for monitoring & analysis of assets



Operator Effectiveness

improve thru Proc Ops, HMI displays and competency training



Productivity

& Lowering Costs

collaboration centers enable deployment & support APC



Wider Deployment of Enabling Solutions

- **It is more than Technology and a Building**
- **Data Integrity analysed & transformed to standard KPI's is key**
- **Continuous Innovation Enabled**

Copper mining – Codelco

Chuquicamata



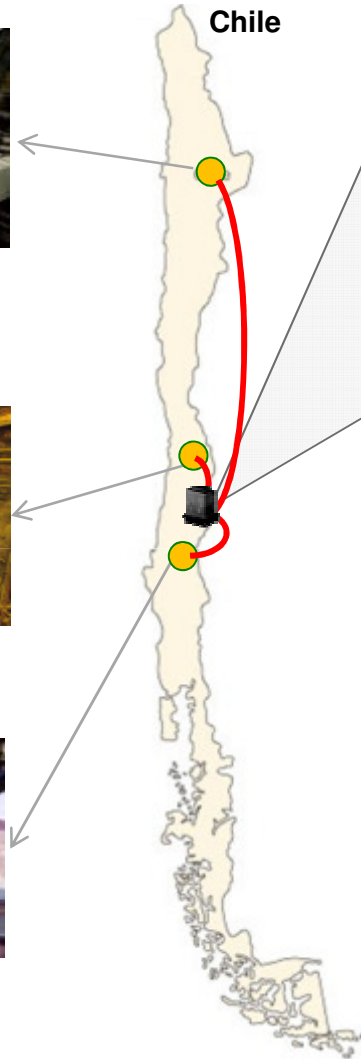
Andina



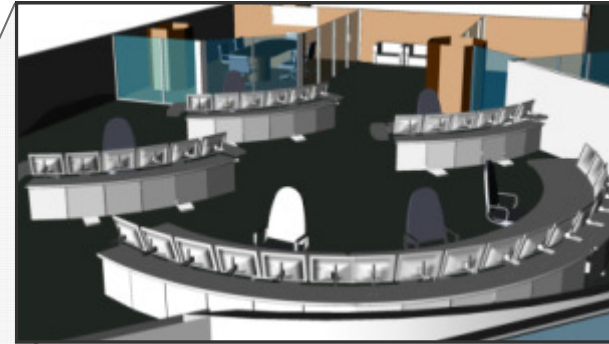
El Teniente



Chile



Remote Monitoring and Support Center - Santiago



- Monitoring & Remote Access
- Centralized platform support
- Process Performance Analysis and Support
- Advanced Application support and tuning
- Facilities Access Control

•Training Outcomes

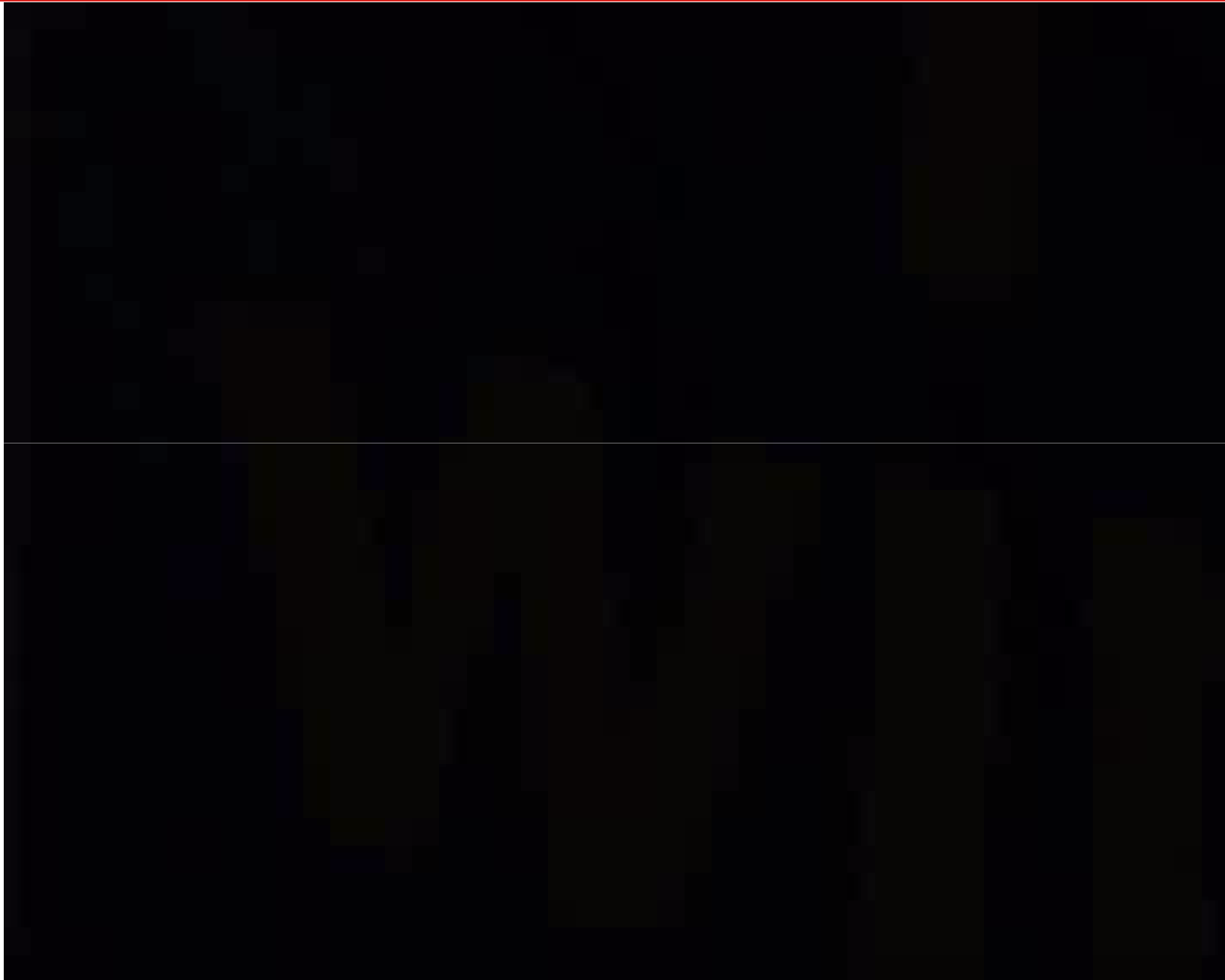
- Improved Throughput (2%)
- Improved Recovery (1.75%)
- Lower Process Variability

+ standardization, improved staffing, energy efficiency, preventive maintenance, personnel safety, benchmarking

Overcoming old work paradigms to achieve new operational horizons

Wintershall – Dan Helder Netherlands

Honeywell



Offshore Oil Production - Wintershall

Honeywell



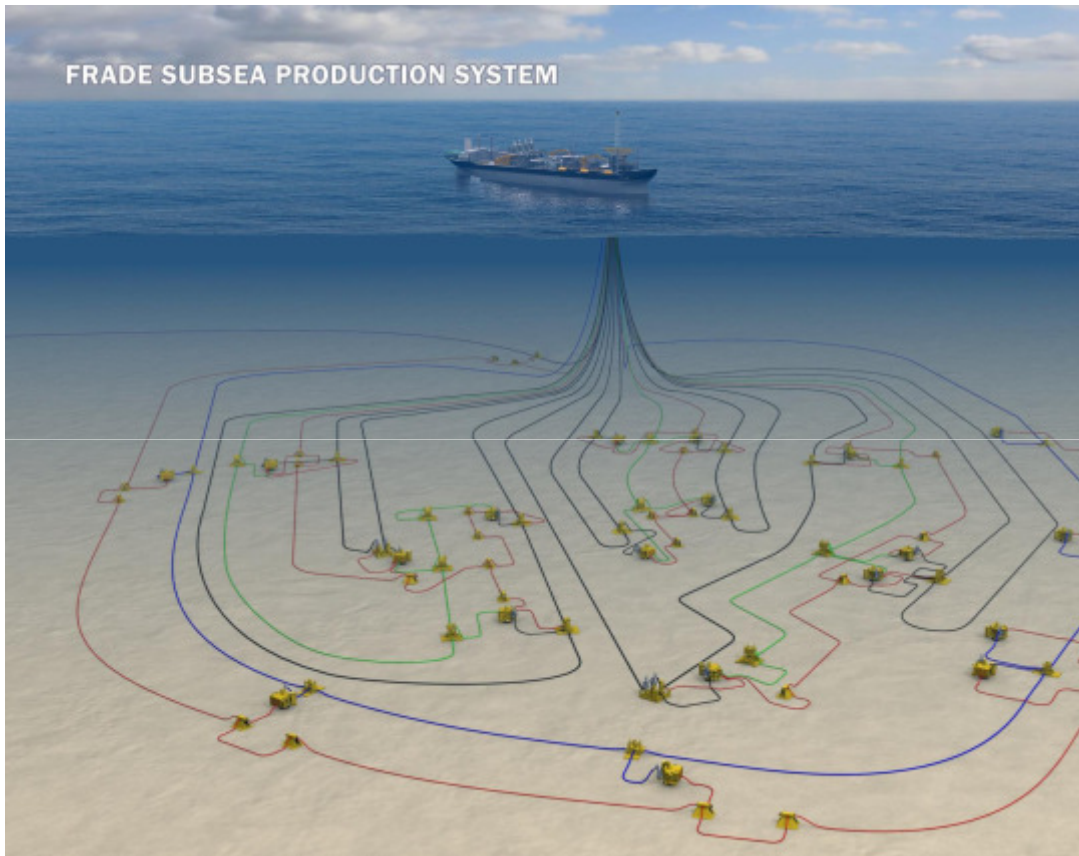
- 18 platforms monitored and operated from a central facility on-shore
- Single production coordination facility to support



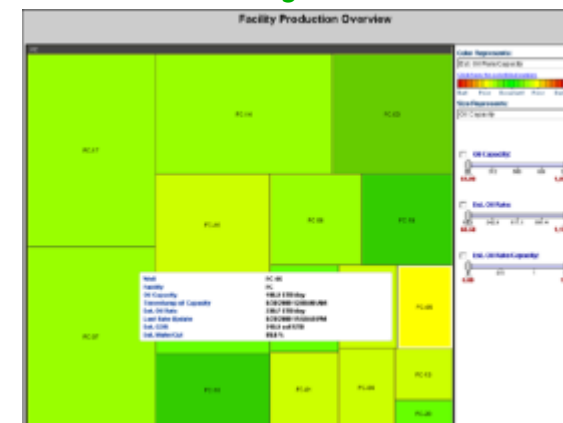
Outcomes

- Offshore staff 8 -> 4 - relocated onshore
- Improved safety, efficiency, availability, response and job satisfaction
- Opportunity to develop smaller reserves
- Aspirational program, platform for future development

Offshore Oil Production - Chevron Frade



- Out-of-the-box Well Performance Monitor solution
- Real-time data availability to onshore engineering staff

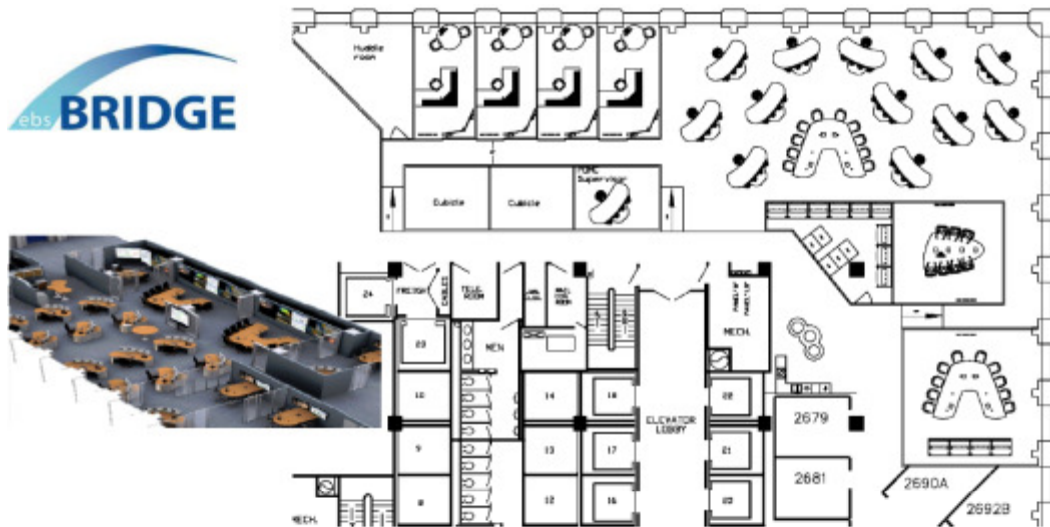


Outcomes

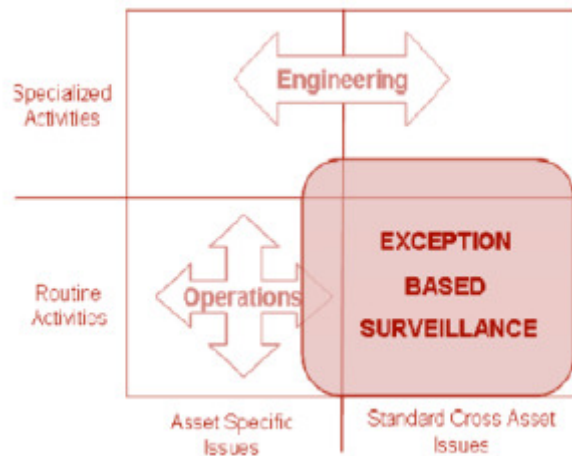
- Solution configured and integrated in time for First Oil
- Net production increase of 4-6% due to real-time data monitoring

Offshore Oil Production - Shell Exception Based Surveillance

Honeywell



Built on Four Pillars
Advanced Alarming
Workflow
Orchestration
Situational Awareness
& Visibility
Knowledge
Management



Rigorous and consistent surveillance, with as-needed escalation