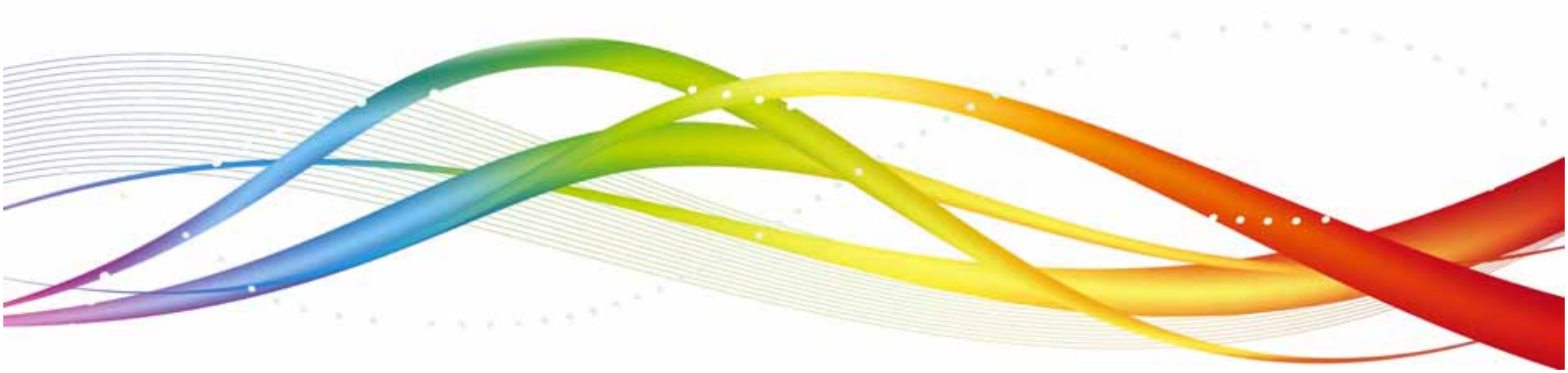
Challenges to Real-Time infrastructure deployment

Dave Reed

Solution Lead Wipro - DC&W

Background



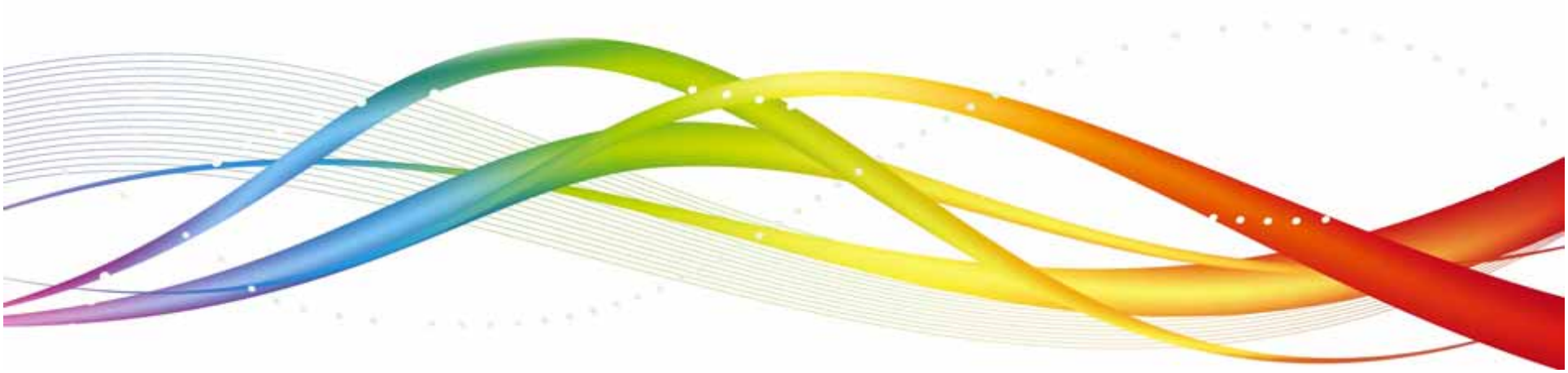
Background – RTDD initiatives

- Access to Real-Time Drilling Data (RTDD) increasingly important
  - Safety
  - Optimisation
  - Regulatory
  - Simulation
- Successful integration of RTD infrastructure requires reliable access to Rig data systems
- RTD deployments can be very complex undertakings
- There are a variety of challenges facing successful initiatives

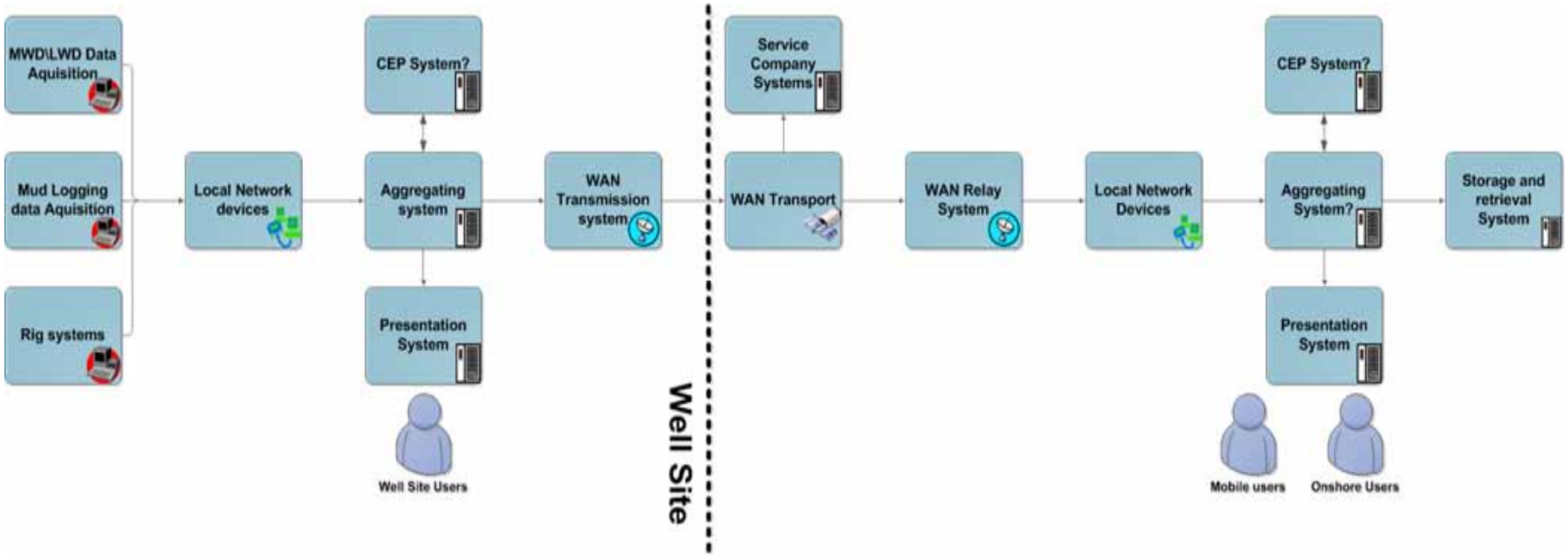
Agenda

1. Real-Time Drilling Infrastructure
2. What constitutes success?
3. What are the Challenges?
4. What are the Future Challenges?
5. Summary

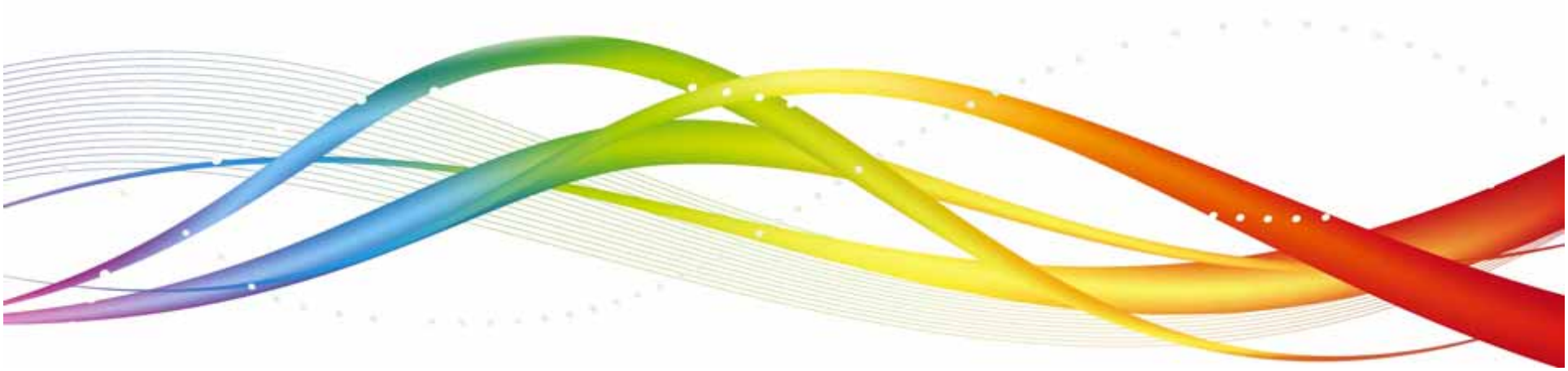
Real-Time Infrastructure



Real-Time Drilling Infrastructure



What Constitutes success?

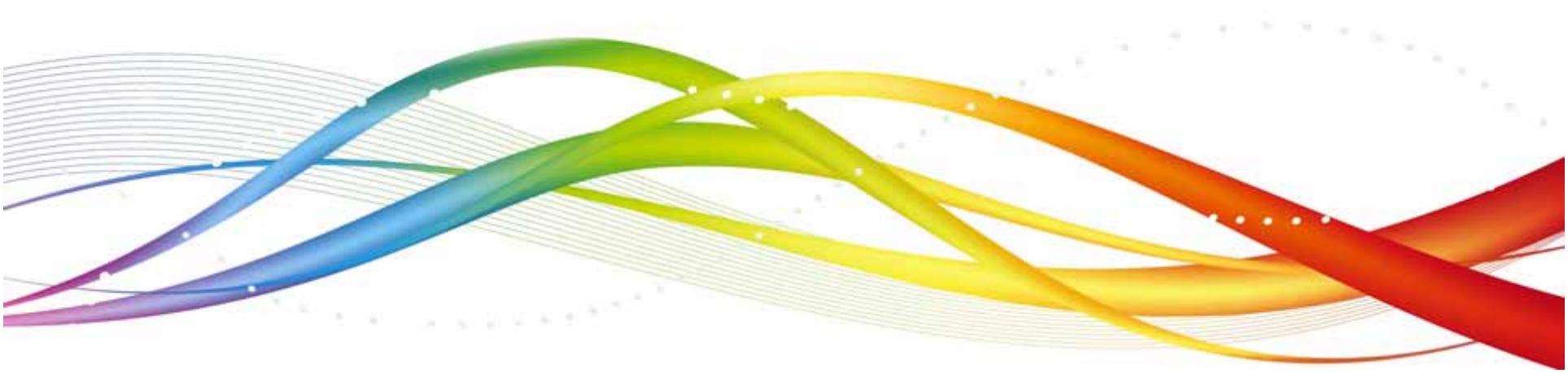


What Constitutes success?

- What Constitutes a “successful RTD initiative?
- Integration with to Rig data sources is complete
  - Supports business requirements and workflows
- System Reliability
- Deployment projects and programmes meet:
  - Forecast time lines
  - Forecast costs
- Perception\Return on investment
  - Cost of CAPEX to benefits
  - Cost of OPEX to benefits
  - Perceived quality of service to benefits

Challenges to Success

Obstacles for achieving Return of investment



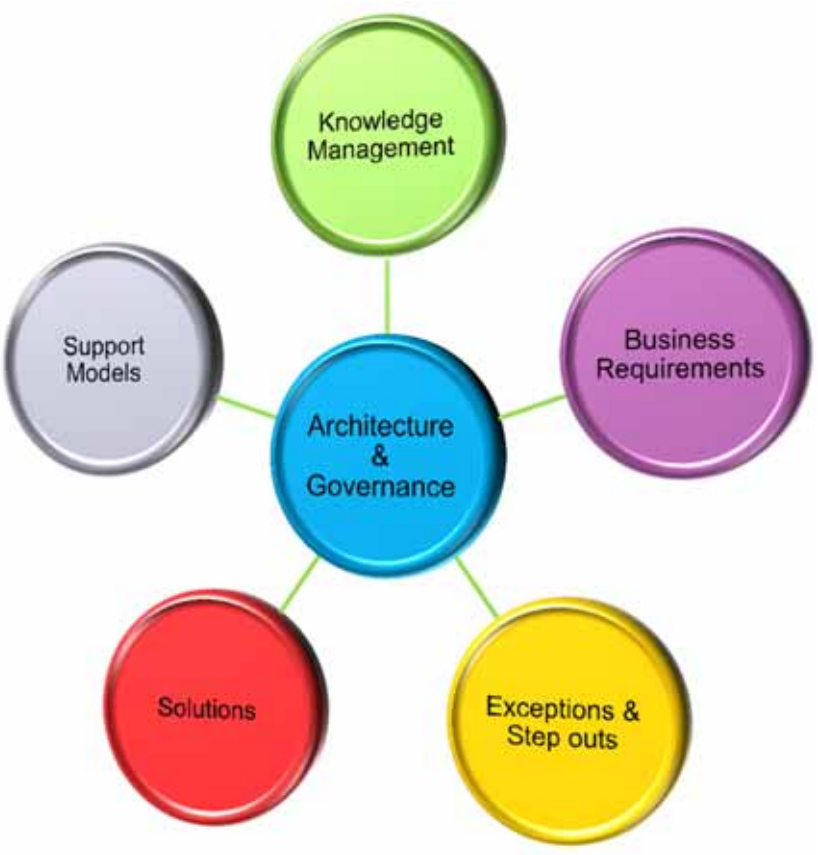
Challenges

- Consistency
- Architecture and Governance
- Time and Cost
- Well Delivery Life Cycle
- Support
- Contracts
- Information and Knowledge
- Security

Consistency

- Infrastructure constraints
- WITSML Definitions
- Workflows
- Stakeholders
- RTDD Maturity
- Costs, timelines and solutions very difficult to forecast

Architecture and Governance



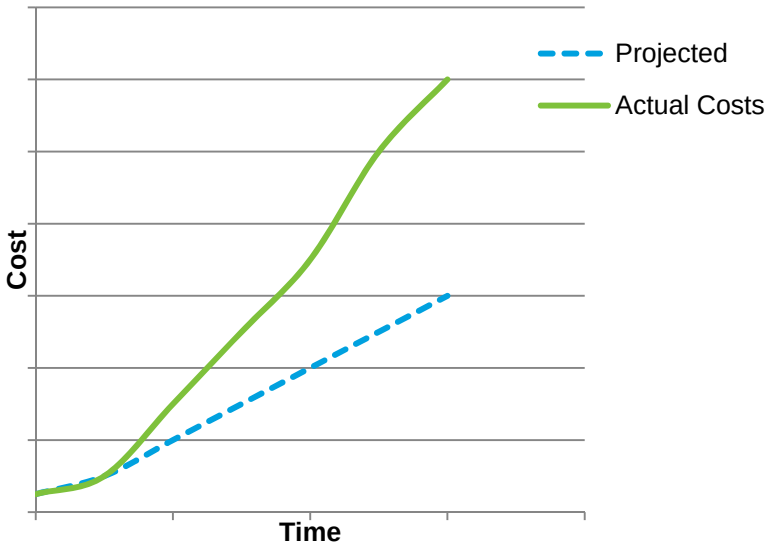
- Deployments based on loose or ambiguous architectural standards
- Changes to solutions not captured or cause issues
- Deployment strategies and solutions often fall down when faced with exceptions
- Governance frameworks can cater for step outs and the unknown
- Standardised consistent architecture and governance framework can reduce delays, costs and provide consistency of service

Time and Cost

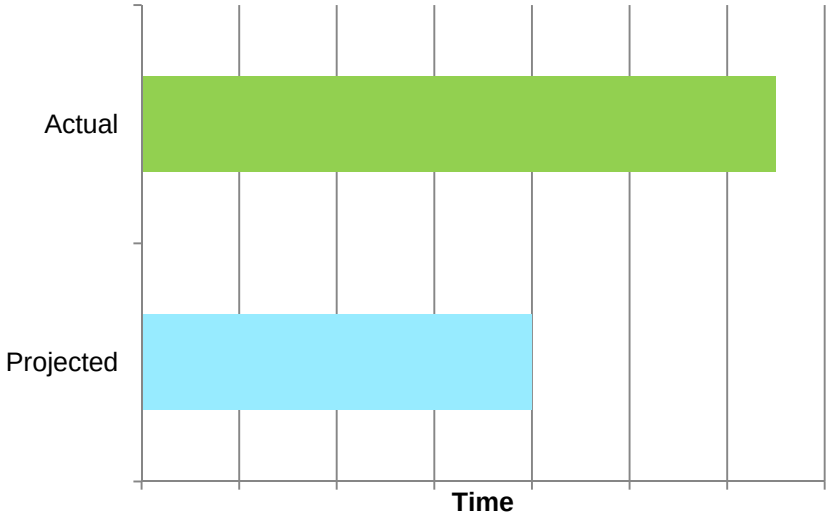
- Forecasting time and costs for RTD is challenging:
  - Bespoke deployments
  - Resource availability
  - Changing stakeholders and project resources

- Standardisation of processes
  - Proactive deployment planning
  - Close ties to Well planners for drilling schedules

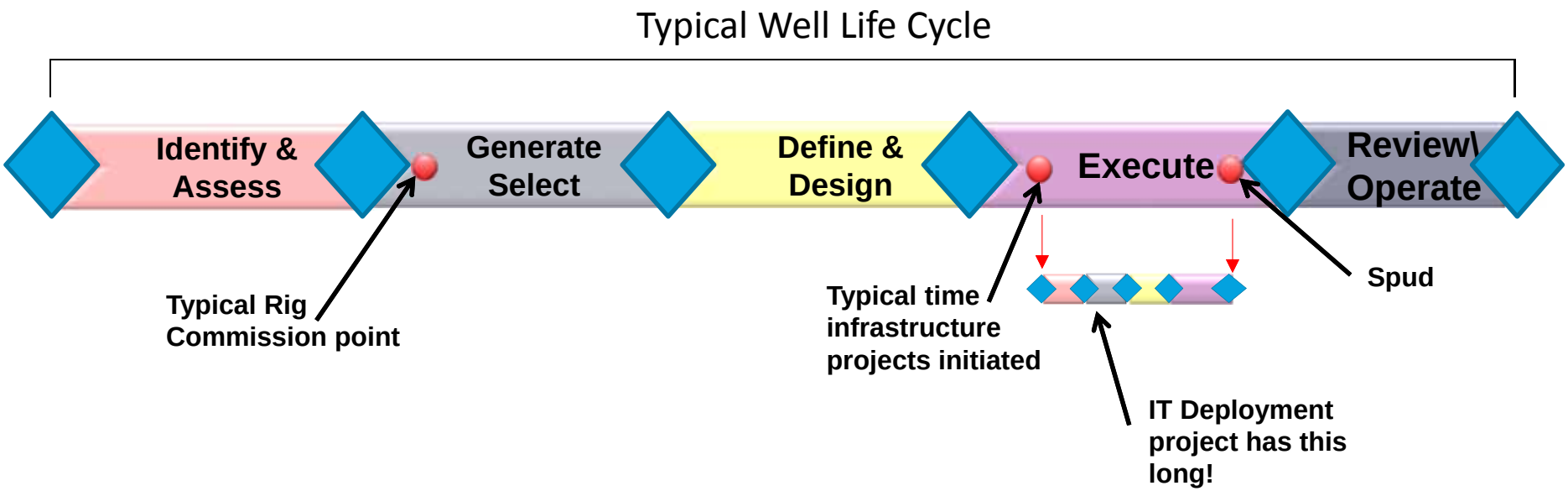
Deployment Costs



Deployment Time



Well Delivery Lifecycle

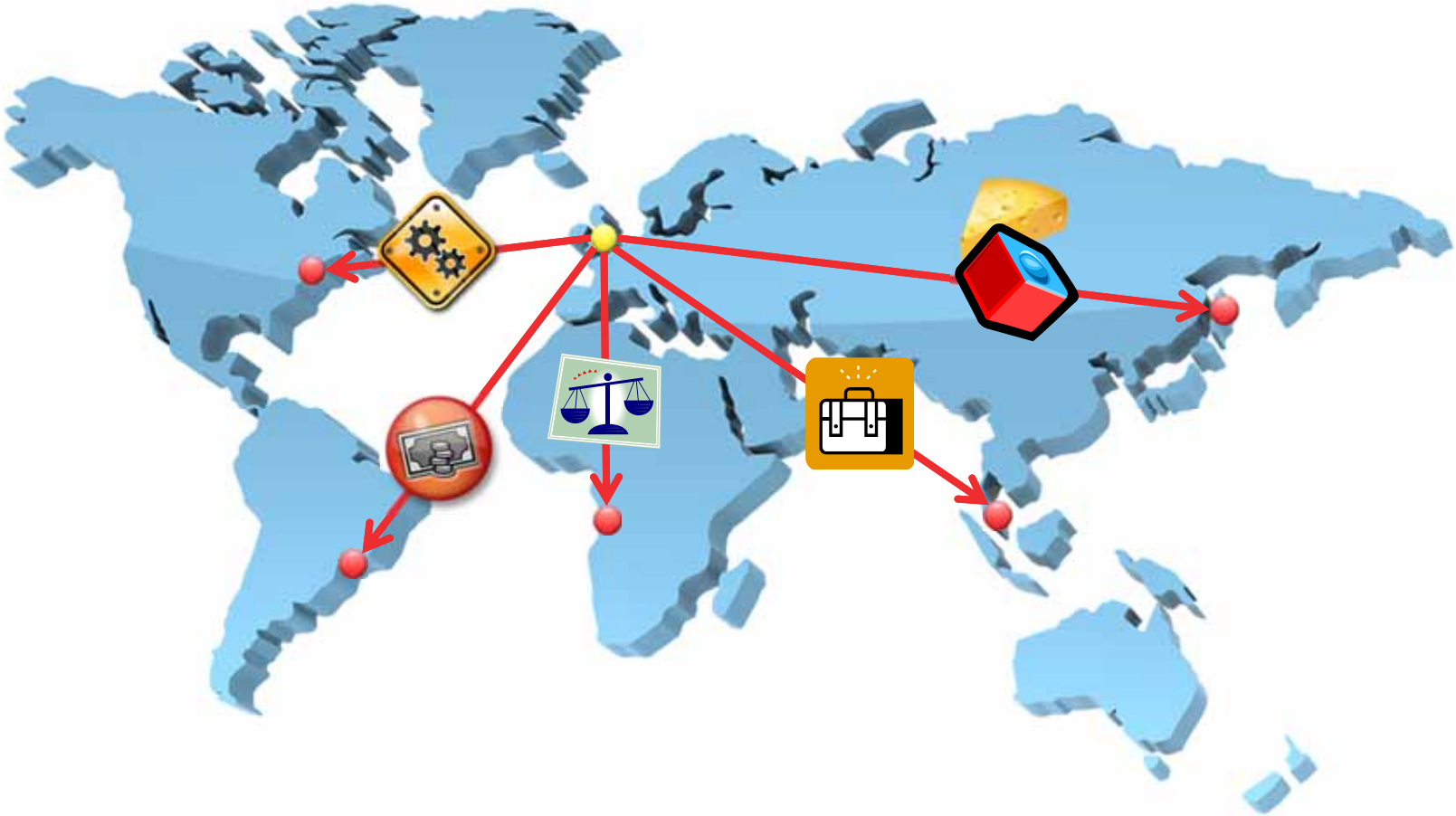


- Infrastructure at the Rig site above file & print is often the last thing to be thought about in Rig commissioning\Rig up activities
- IT infrastructure deployment often reactive, success often on luck and great resources
- RTD initiatives should be early in the well delivery process
  - Prepare for problems
  - Manage step outs

Support

- Support process should be global
  - Aligned to RT architecture standards & solutions
  - Detail realistic availability and QoS figures
  - Business Process support Vs. IT Component support
  - Develop clear and consistent workflows

Joined up thinking



- Use of RTDD globally need to be mandated, with clearly defined business case
- RTD initiatives should be geared to enable local asset needs to be managed

The fine print

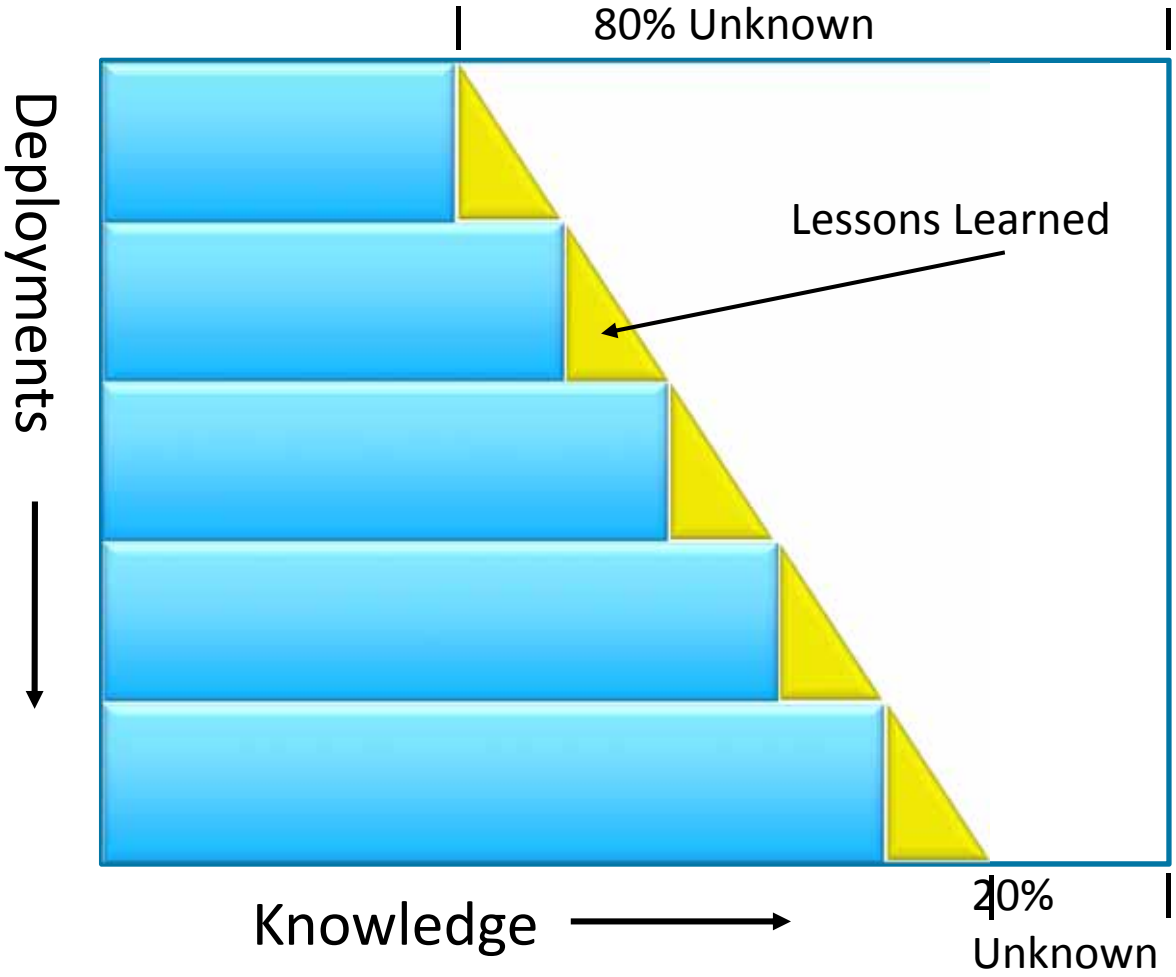
- Rig providers and client contracts should have the inclusion of Real-time friendly clauses

Information and Knowledge

- Lessons learned from pervious deployments often lost
  - Bespoke “non-globalised” projects
  - Changing stakeholders and deployment teams
  - Siloed thinking

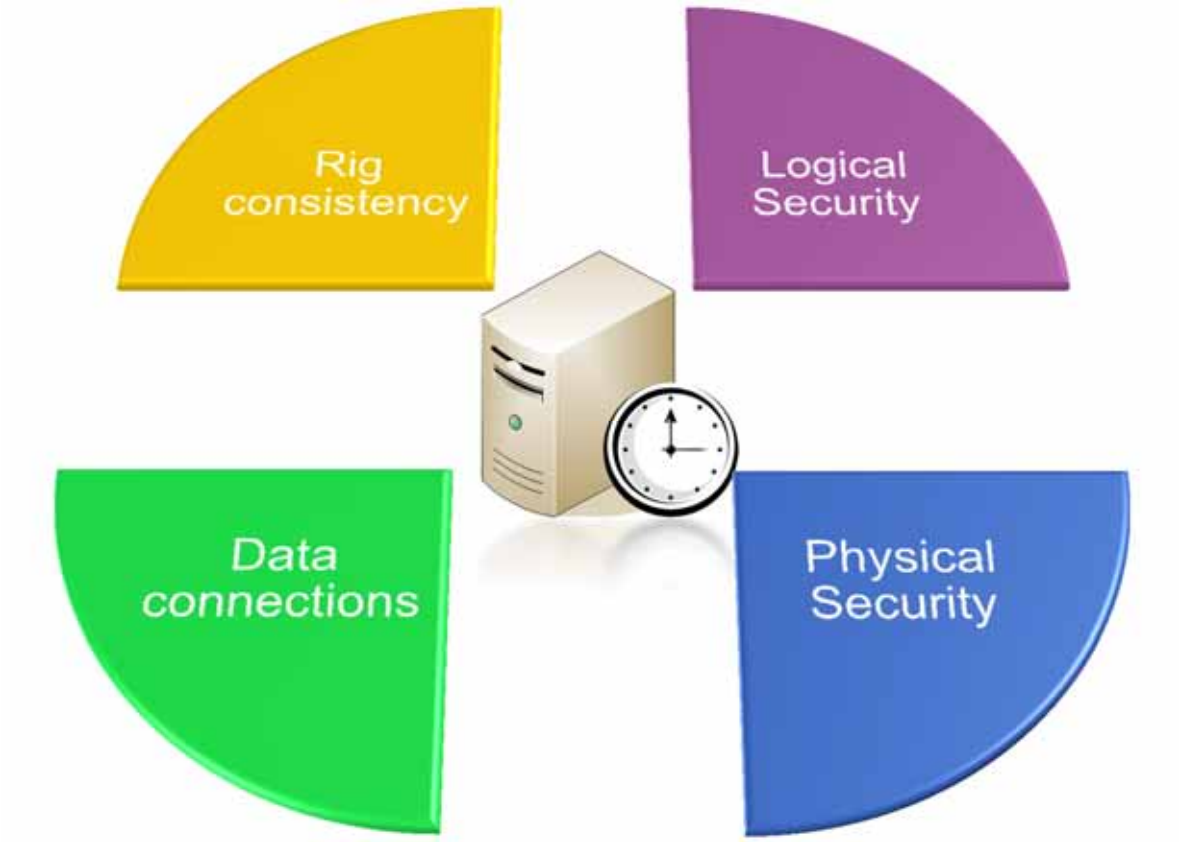
- Poor or missing information
  - Rig surveys often inconsistent, miss key areas of importance and come too late in the process
  - Handover to operations often poor
- Information framework processes should be developed
  - Lessons learned processes
  - Enable access to knowledge management tools
  - Retention of key project personnel
- Process are required to ensure that lessons learned are put to good use
  - How do they feed into governance and architectural frameworks
  - How is the knowledge used again

How KM can be used



Is my data protected?

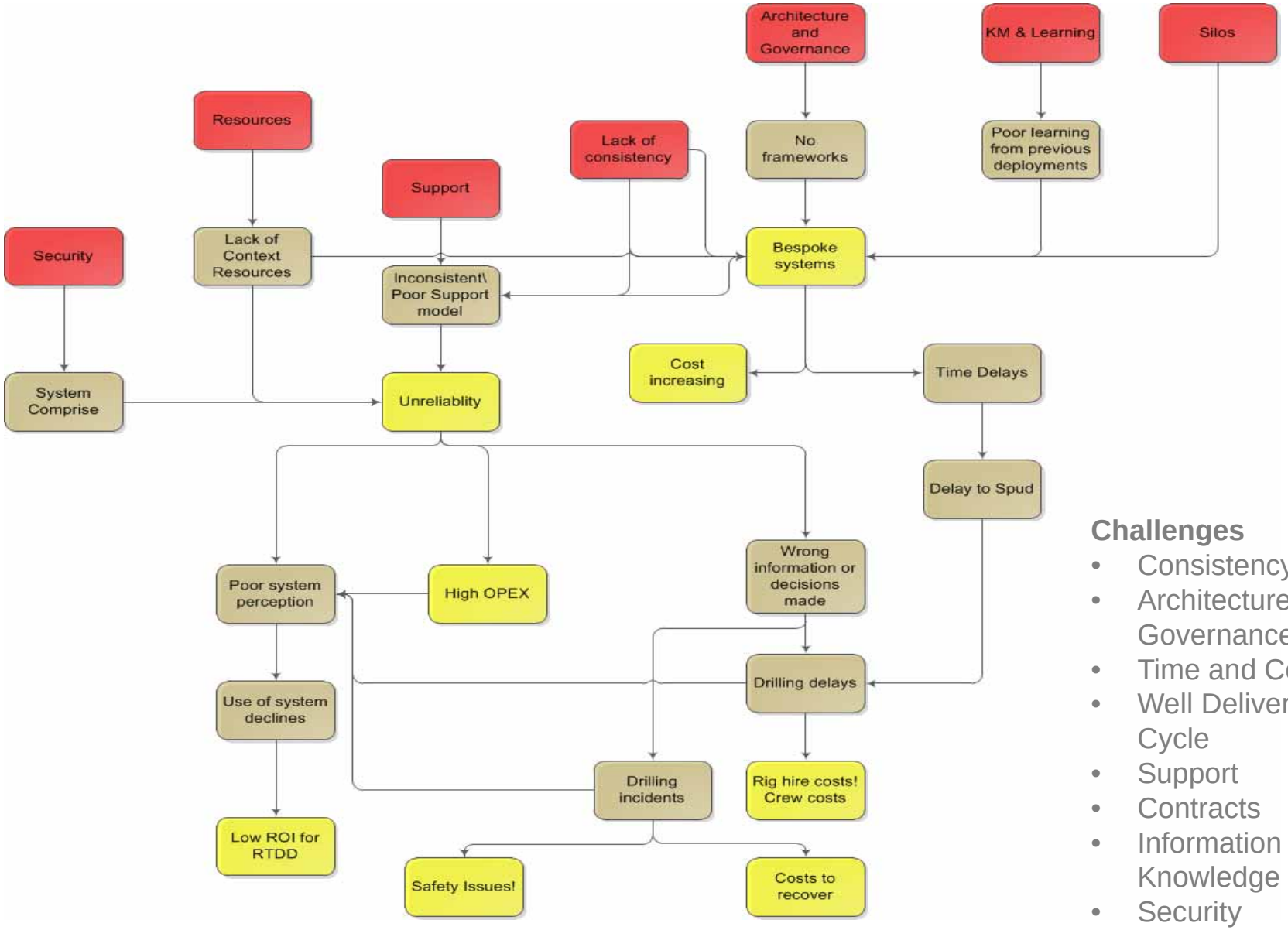
- Security processes need to be standardised
  - Processes for auditing, monitoring and enforcement should be adopted



Who puts this stuff in?

- RTD infrastructure deployments require more than traditional IT resources
- Interfacing with the business, well site contractors, operator reps
- These projects require context based resources that understand the challenges
- Deployments constrained by limited resource pool

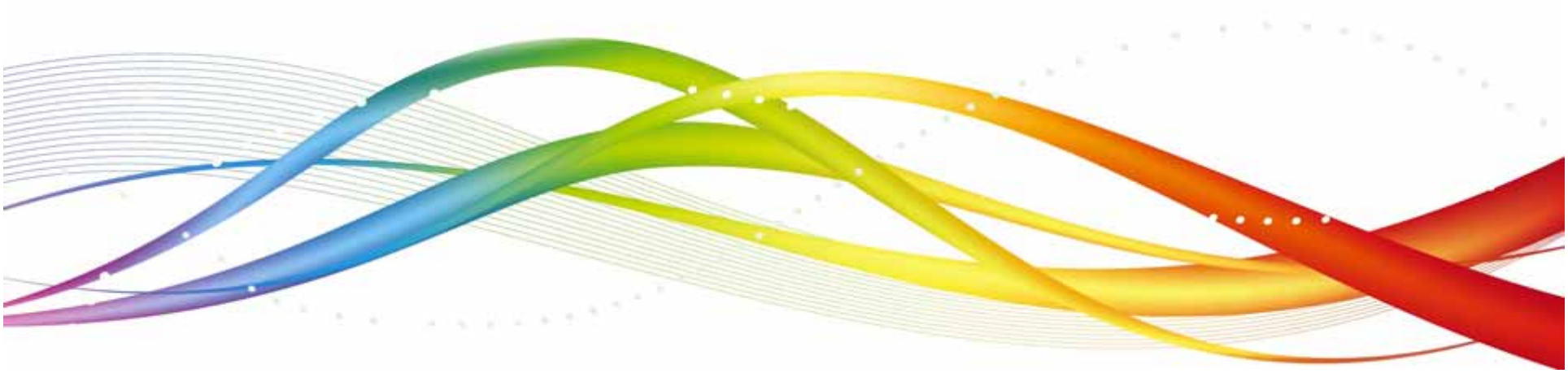
So how do they add up?



Challenges

- Consistency
- Architecture and Governance
- Time and Cost
- Well Delivery Life Cycle
- Support
- Contracts
- Information and Knowledge
- Security

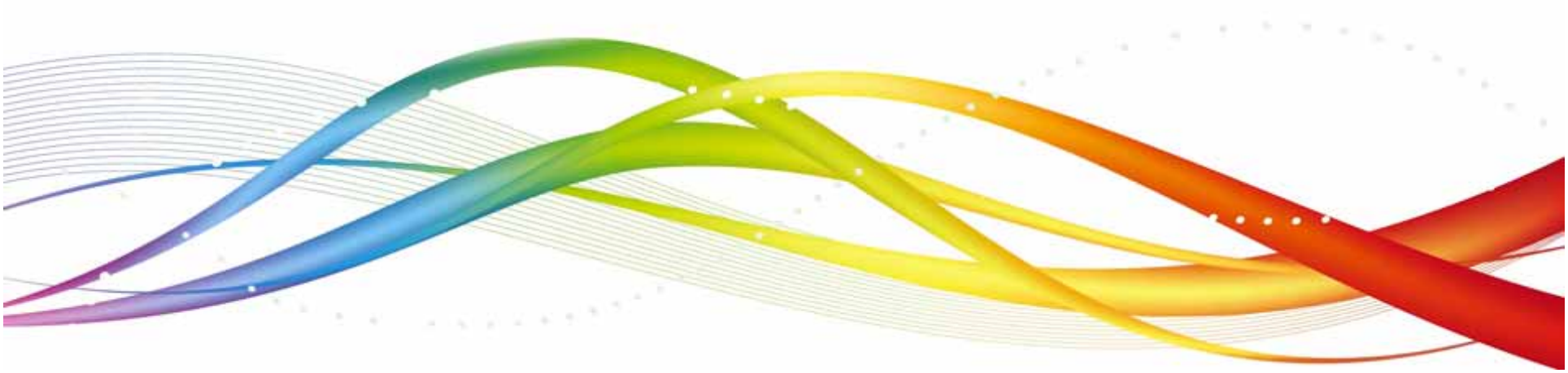
Future Challenges



Future Challenges

- Unconventional recovery
- Legislature
- Data Growth
- Challenging locations
- Drilling technologies

Summary



Summary and Conclusion

- RTDD deployments offer a number of challenges
  - Resources
  - Consistency
  - Silos
- Without consistent approach to RTTD deployments:
  - Increases inaccurate forecasting
  - High costs
  - Incomplete support models
- Poor underpinning IT processes for RTDD deployment = poor return on investment from RTDS
- RTDD processes need to implement the best tools and practices
- Without good processes, future drilling and data requirements will present additional challenges

Dave Reed
Solution Lead – Wipro DC&W

David.Reed@wipro.com
http://uk.linkedin.com/in/davereed76dcandwit