Introducing BiModal IT

John McLaren

Account Director

Dell UK

Topics of Conversation

- Why Dell
- Introduction
- The backstory
- Digital Transformation
- Disruption
- BiModal
- Impact for Oil & Gas
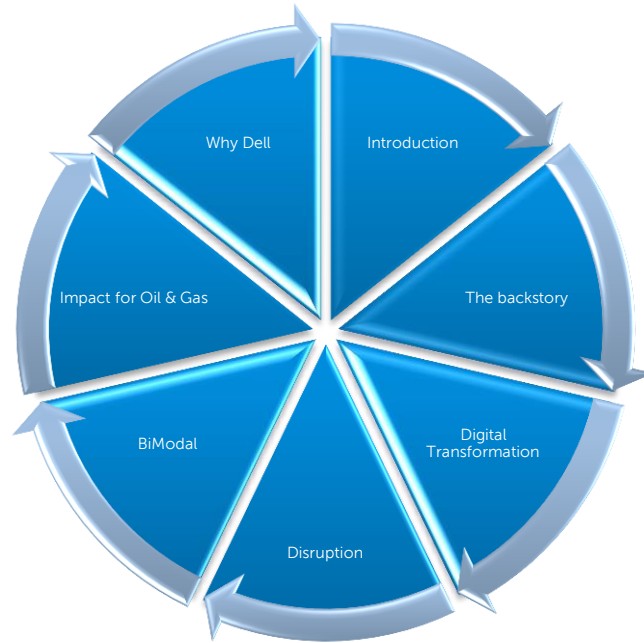
The Backstory

2013 – Every Industry Will Be Digitally Re-Mastered

Every industry will be digitally re-mastered

Technology will redefine core products

Attack will come from outside and underneath

Control of the platform wins the game

SPA:By 2020 the strongest companies will be those with most industry digital platform control

Mark Raskino
Gartner Symposium 2013

Digital Transformation

Three Critical External Forces

Digital Disruption

Boundary Blurring

Compound Uncertainty

Resolution Revolution

Three Critical External Forces

Digital Disruption

Boundary Blurring

Compound Uncertainty

Resolution Revolution

Resolution Revolution

2000s

2010s

2020s
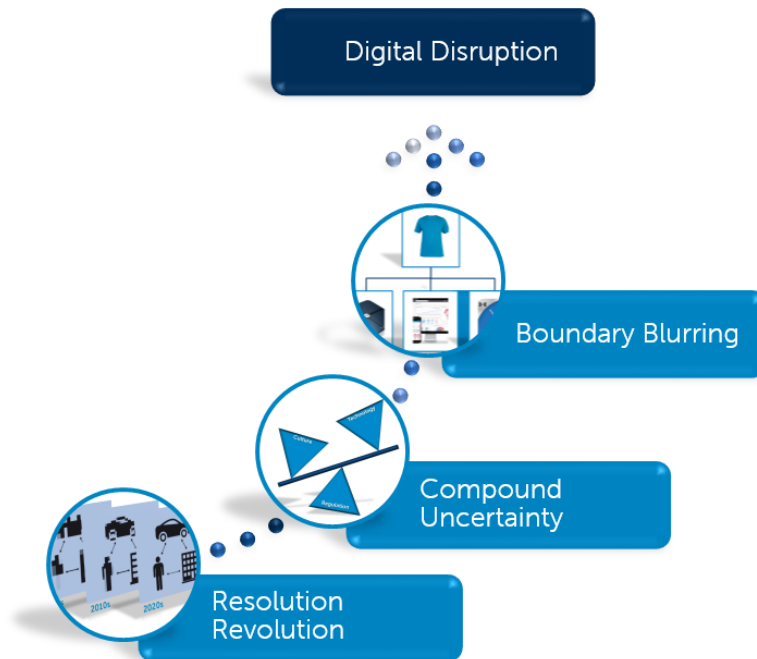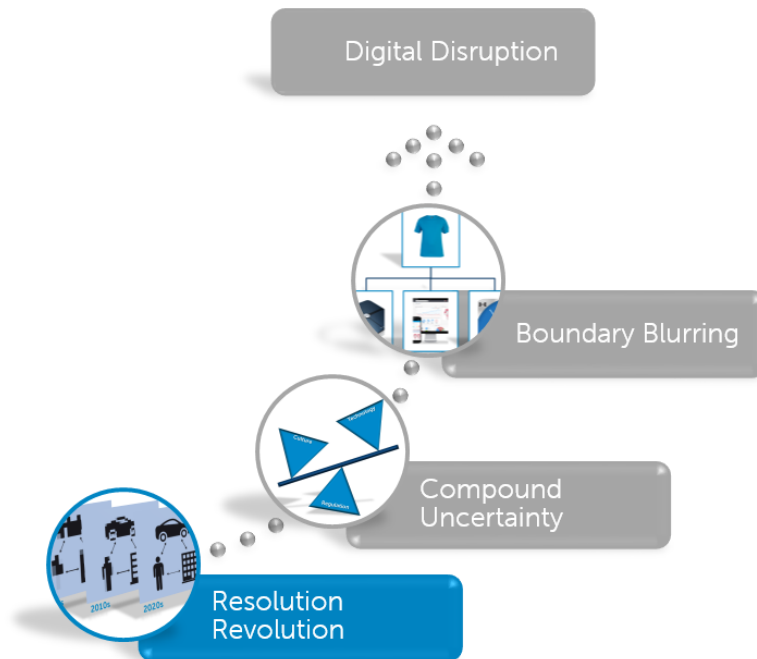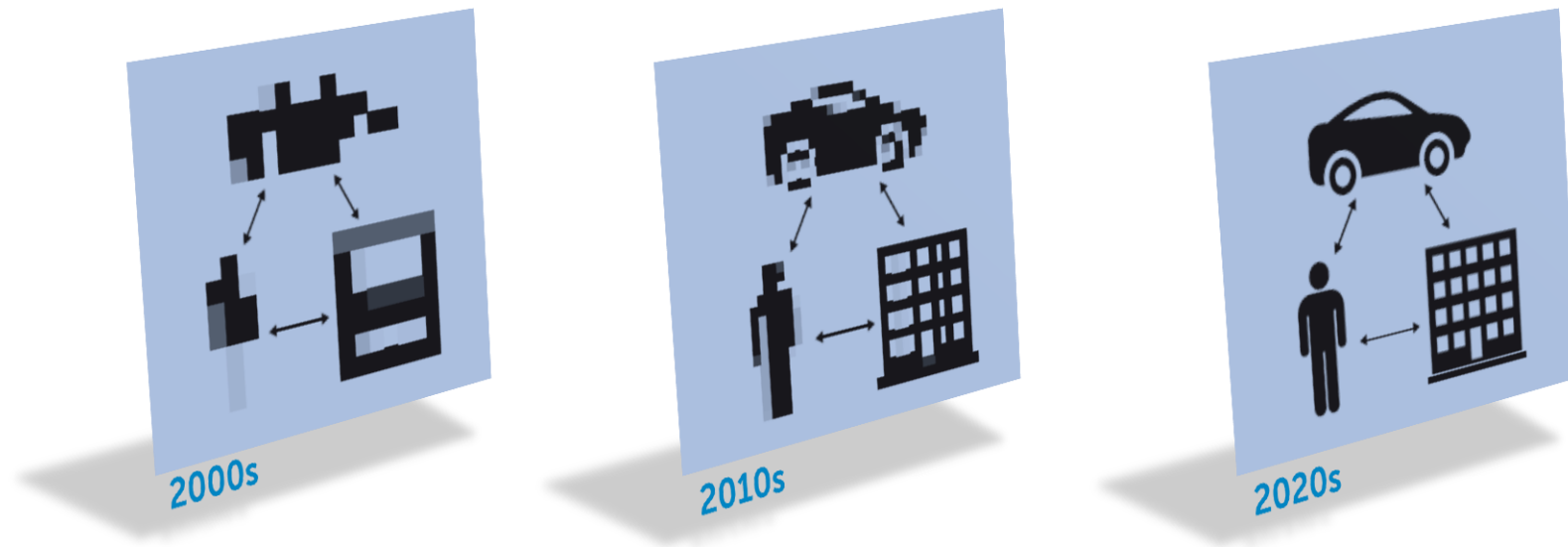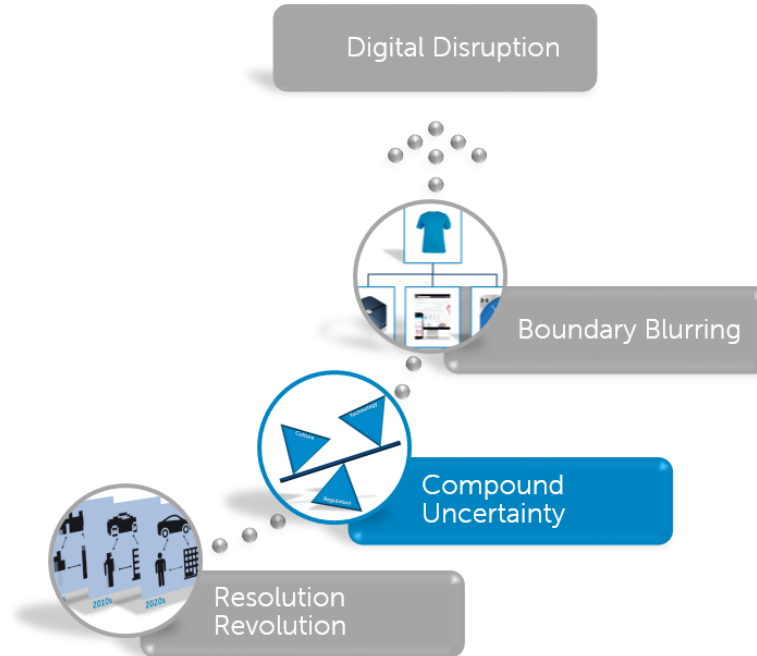
The effect of being able to see and sense what is happening in both the physical and digital worlds in higher fidelity, then understanding and being able to exercise more precision control.

Three Critical External Forces

Digital Disruption

Boundary Blurring

Compound Uncertainty

Resolution Revolution

Compound Uncertainty
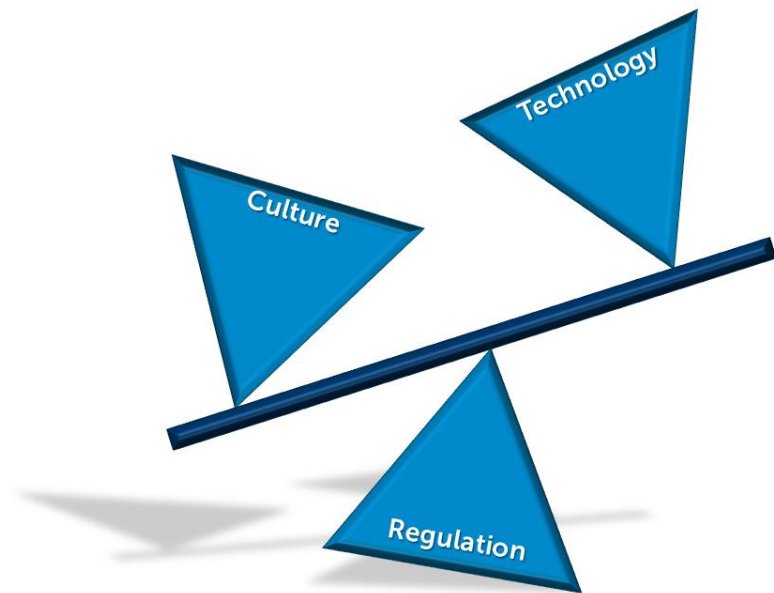
The combined and complex effects of digital change that undermine the shift the mind-set's, structures and practices on which leaders have previously relied. The key uncertainties are in three areas: technology, culture and regulation.

Three Critical External Forces

Digital Disruption

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Compound Uncertainty

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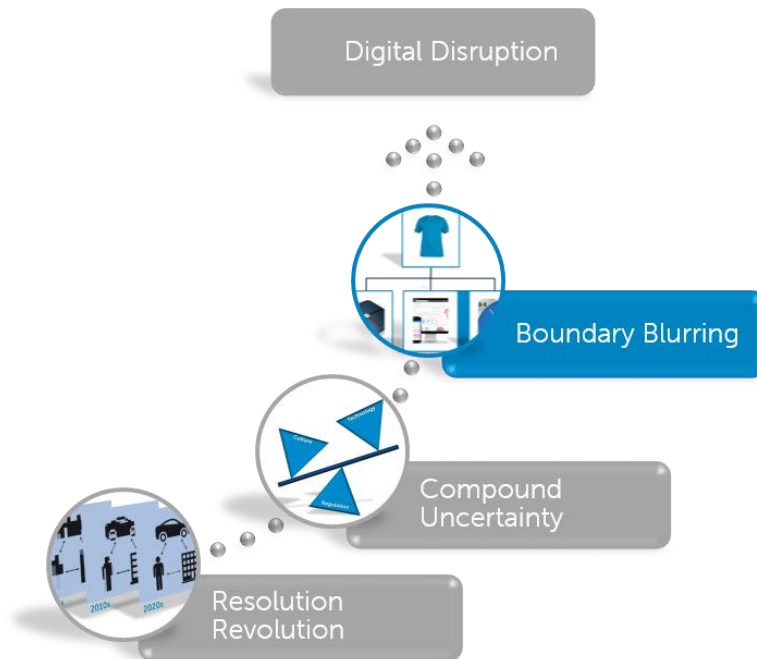
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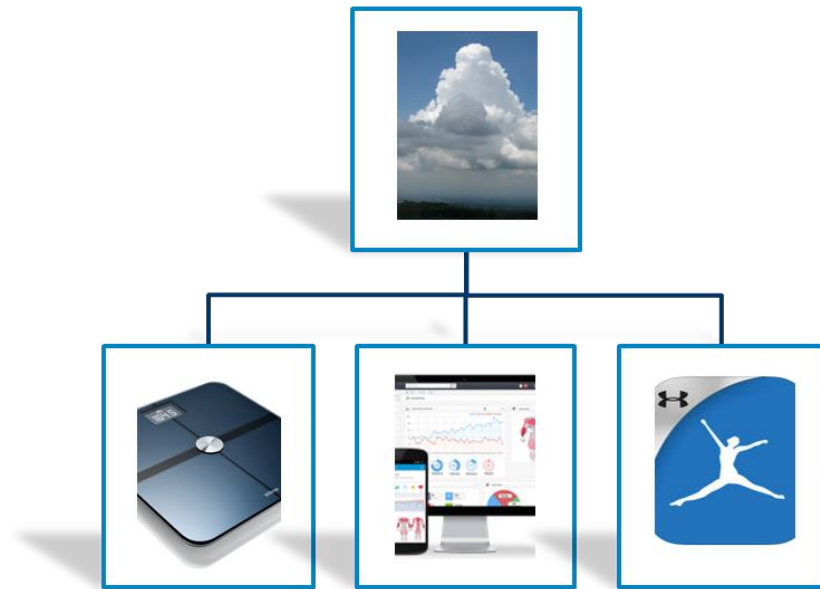
The merging of digital and physical worlds, leading to alterations in the core products, propositions and possibilities for industries as we know then and softening the dividing lines between industries. The effect then cascades across ecosystems, enterprises, people and things.

Three Critical External Forces

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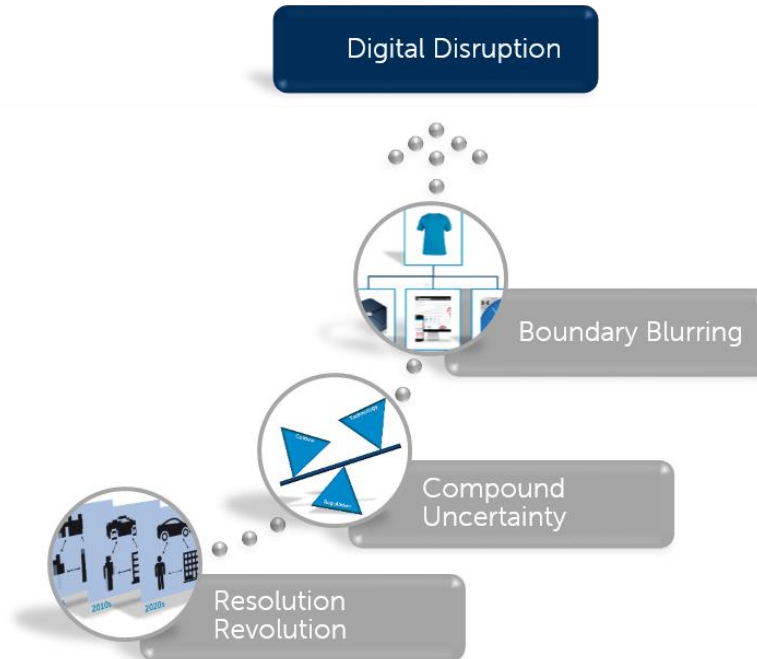
Disruption

Digital Disruption

"We're not just a car manufacturing company. We're a technology company. As our vehicles become part of the IoT, we'll also become and information company."

Mark Fields

CEO – Ford

"If you went to bed last night as an industrial company….

….You're going to wake up in the morning as a software and analytics company."

Jeffrey Immelt

CEO – G.E.

Business Capability Modelling & Pace Layering

Business Capability Representation: Future-State Financial Services Organization

Sell and Service Products

Support Campaigns	Develop Channels	Prospect for New Customers
Administer Sales	Service Customers	Onboard Customers

Develop Marketing Strategy

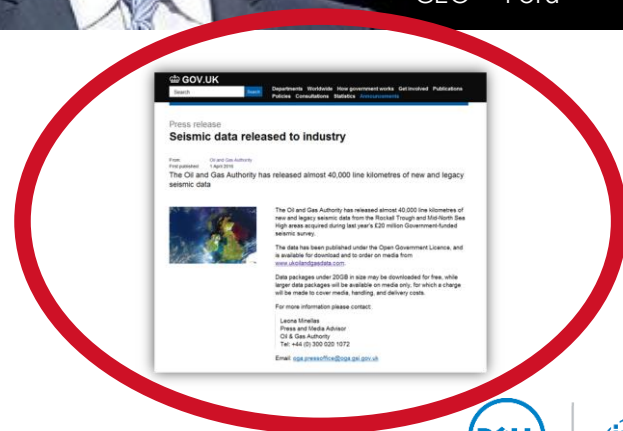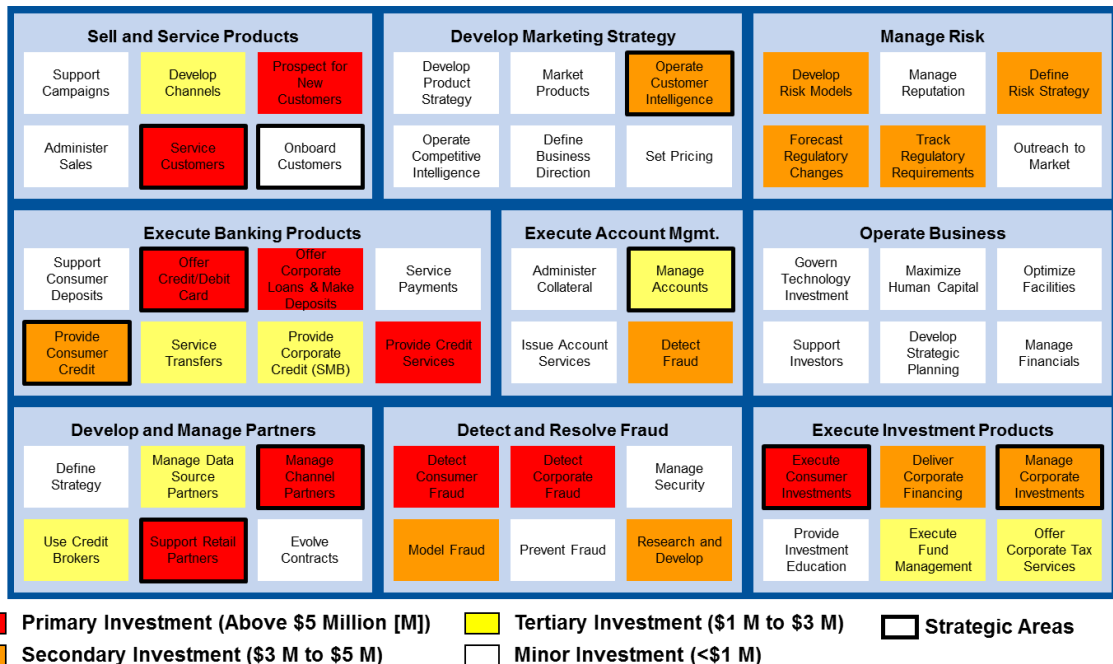|		
Develop Product Strategy	Market Products	Operate Customer Intelligence
Operate Competitive Intelligence	Define Business Direction	Set Pricing

Manage Risk

Develop Risk Models	Manage Reputation	Define Risk Strategy
Forecast Regulatory Changes	Track Regulatory Requirements	Outreach to Market

Execute Banking Products

Support Consumer Deposits	Offer Credit/Debit Card	Offer Corporate Loans and Make Deposits	Service Payments
Provide Consumer Credit	Service Transfers	Provide Corporate Credit (SMB)	Provide Credit Services

Execute Account Mgmt.

Administer Collateral	Manage Accounts
Issue Account Services	Detect Fraud

Operate Business

Govern Technology Investment	Maximize Human Capital	Optimize Facilities
Support Investors	Develop Strategic Planning	Manage Financials

Develop and Manage Partners

Define Strategy	Manage Data Source Partners	Manage Channel Partners
Use Credit Brokers	Support Retail Partners	Evolve Contracts

Detect and Resolve Fraud

Detect Consumer Fraud	Detect Corporate Fraud	Manage Security
Model Fraud	Prevent Fraud	Research and Develop

Execute Investment Products

Execute Consumer Investments	Deliver Corporate Financing	Manage Corporate Investments
Provide Investment Services	Execute Fund Management	Offer Corporate Tax Services

Business Capability Representation: Vision, Investments and Strategy

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Legend:
- Primary Investment (Above $5 Million [M])
- Secondary Investment ($3 M to $5 M)
- Tertiary Investment ($1 M to $3 M)
- Minor Investment (<$1 M)
- Strategic Areas

A Pace-Layered View of Systems

New Idea
"I don't know exactly what I want. I need to experiment."

Better Idea
"I know what I want, but it needs to be different from my competitors."

Common Idea
"I know what I want, and it doesn't have to be unique."
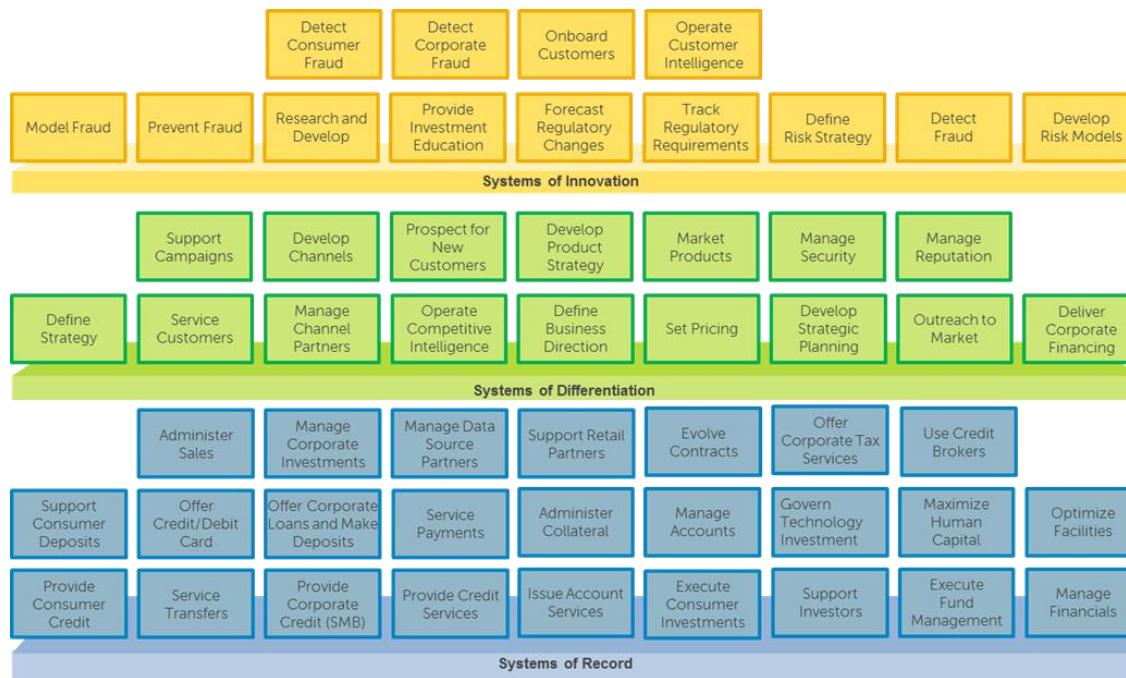
Systems of Innovation

Systems of Differentiation

Systems of Record

Attributes	Systems of Record	Systems of Differentiation	Systems of Innovation
Business Processes	Integrated, commoditized, stable	Highly configurable and customizable	Experimental, ambiguous, dynamic, ad hoc
Pace of Change	Slow, infrequent, incremental (every six to 12 months)	Moderate, more frequent (every three to six months)	Rapid, very frequent, ad hoc (weekly; sometimes daily)
Lifetime	More than 10 years	Two to five years	Three to 12 months
Strategic Focus	Standardization; operational efficiency	Agility/flexibility; competitive differentiation	Disruptive thinking; alternative business models
Stakeholders/ Ownership	High executive engagement; low end-user engagement	High LOB executive engagement; moderate end-user engagement	Moderate executive engagement; high end-user engagement
Funding	Capex and opex; annual budget	Capex and opex; IT budget or departmental	Departmental opex; innovation fund

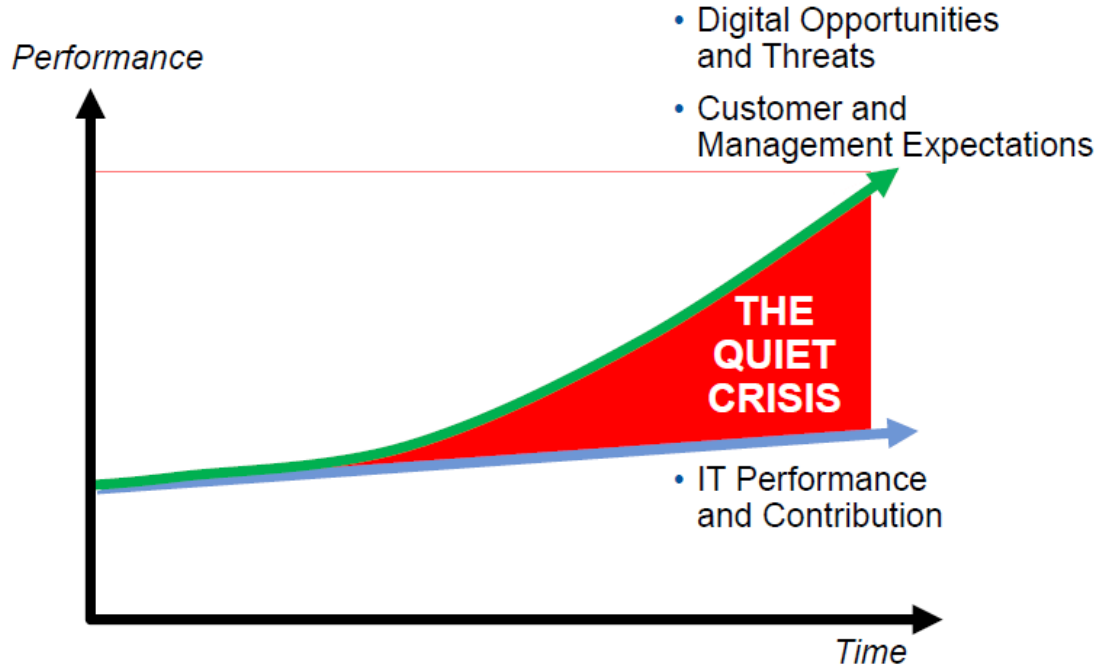# Leveraging Pace Layering to Understand Areas of Innovation and Differentiation

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Legend: Innovation | Differentiation | Record (Commodity) | Strategic Areas

Leveraging Pace Layering to Understand Areas of Innovation and Differentiation

Introducing BiModal IT

A Quiet Crisis is Brewing

Performance

- Digital Opportunities and Threats
- Customer and Management Expectations

THE QUIET CRISIS

- IT Performance and Contribution

Time

Welcome to the Digital Wild West

Where opportunities come and go quickly, and winning or losing has meaningful consequences for the business.

Gartner : Strategic Planning Assumption
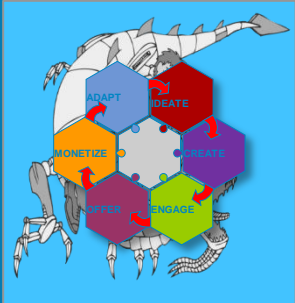
By 2017, 75% of IT organizations will have a bimodal capability. Half will make a mess.

IT leaders cannot confront the range of needs presented by digital business with a single, conventional mode of IT.

Bimodal IT is not a "nice to have."

The Third Era of Enterprise IT

We are here

	IT Craftsmanship	IT Industrialization	Digitalization
Focus	Technology	Linear processes	Business models
Capabilities	Programming, system management	IT management, service management	Digital leadership
Engagement	Isolated, disengaged internally and externally	Treat colleagues as customers, unengaged with external customers	Treat colleagues as partners, engaged with external customers
Outputs and Outcomes	Sporadic automation and innovation, frequent issues	Services and solutions, efficiency and effectiveness	Digital business innovation, new types of value

What is BiModal IT

Bimodal IT is the practice of managing
two separate, coherent modes of IT delivery, one
focused on stability and the other on agility.

Mode 1 is traditional and
sequential,
emphasizing safety,
accuracy.

Mode 2 is exploratory and
nonlinear,
emphasizing agility and
speed.

Bimodal Is Not:

- Anything that can be bifurcated in two

- Only an IT capability

- Only agile development

- Only an operating model or organization chart change

- The same as pace layering

- A formalization of shadow IT

The Industrialization Era Created Marathon Runners

IT Industrialization

Linear processes

IT management, service management

Treat colleagues as customers, unengaged with external customers

Services and solutions, efficiency and effectiveness

=

The Digital Era Requires Sprinters

Digitalization

Business models

Digital leadership

Treat colleagues as partners, engaged with external customers

Digital business innovation, new types of value

Bimodal IT = Marathon Runners + Sprinters, Deeply Different, Both Essential

Mode1		Mode 2
Reliability	**Goal**	Agility
Price for performance	**Value**	Revenue, brand, customer experience
Waterfall, V-model, high-ceremony IID	**Approach**	Agile, Kanban, low-ceremony IID
Plan-driven, approval-based	**Governance**	Empirical, continuous, process-based
Enterprise suppliers, long-term deals	**Sourcing**	Small, new vendors, short-term deals
Good at conventional process, projects	**Talent**	Good at new and uncertain projects
IT-centric, removed from customer	**Culture**	Business-centric, close to customer
Long (months)	**Cycle Times**	Short (days, weeks)

Think Marathon Runner

Think Sprinter

Pace Layering and Bimodal IT Are Complementary

Change

Governance

+

-

-

+

Mode 2

Mode 2

Mode 1

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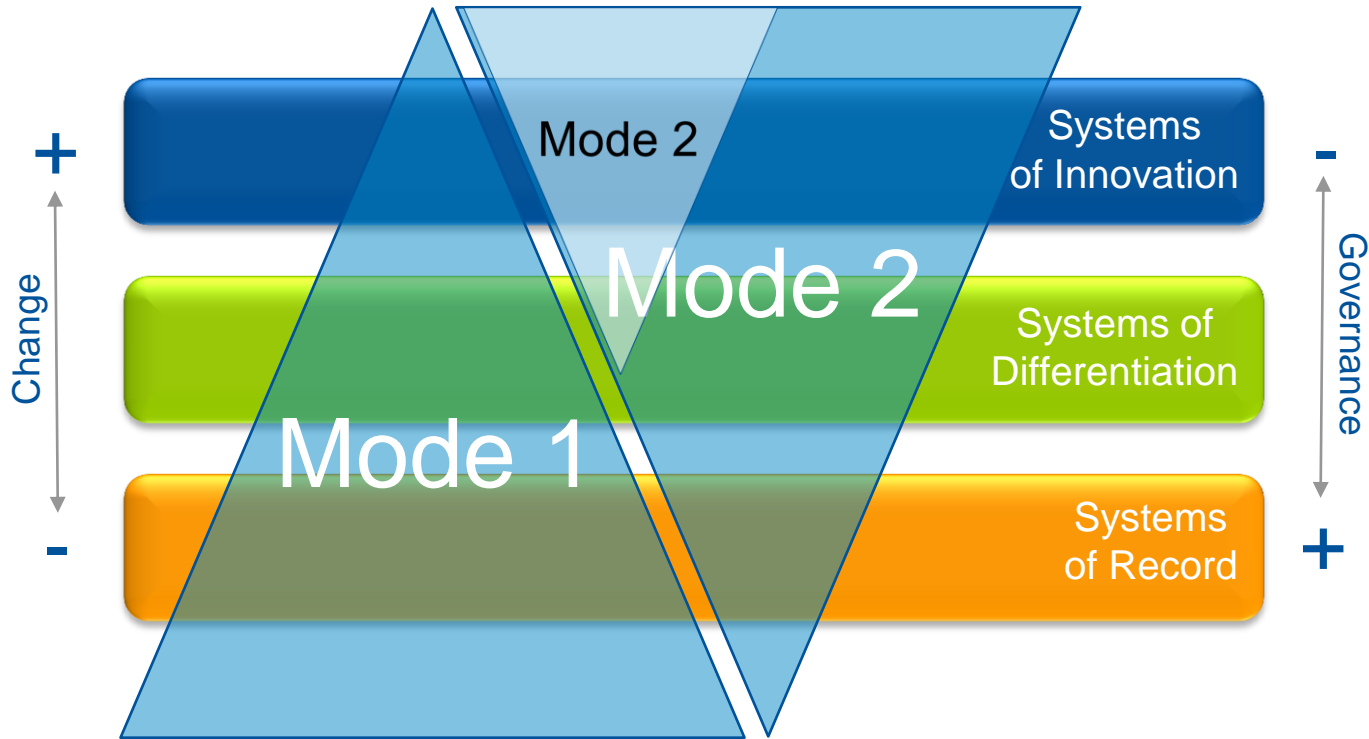
Impact for Oil & Gas

The 2016 Upstream Oil and Gas Digital Trends Survey

Digital technologies are recognised as adding value to upstream oil and gas companies by helping reduce costs, make faster and better decisions and increase workforce productivity.

Despite the low oil price environment, the majority of oil and gas companies will continue to invest at least the same amount or more in digital technologies over the next 3-5 years.

Digital investment today is focused on mobility and the Internet of Things (IoT) – with analytics and IoT predicted to lead the way over the next 3-5 years.

To realise the benefits of digital, companies will need to rapidly improve their capabilities, including maturity in analytics.

Oil and gas companies are increasingly leveraging the cloud to more rapidly unlock the value of other digital technologies.

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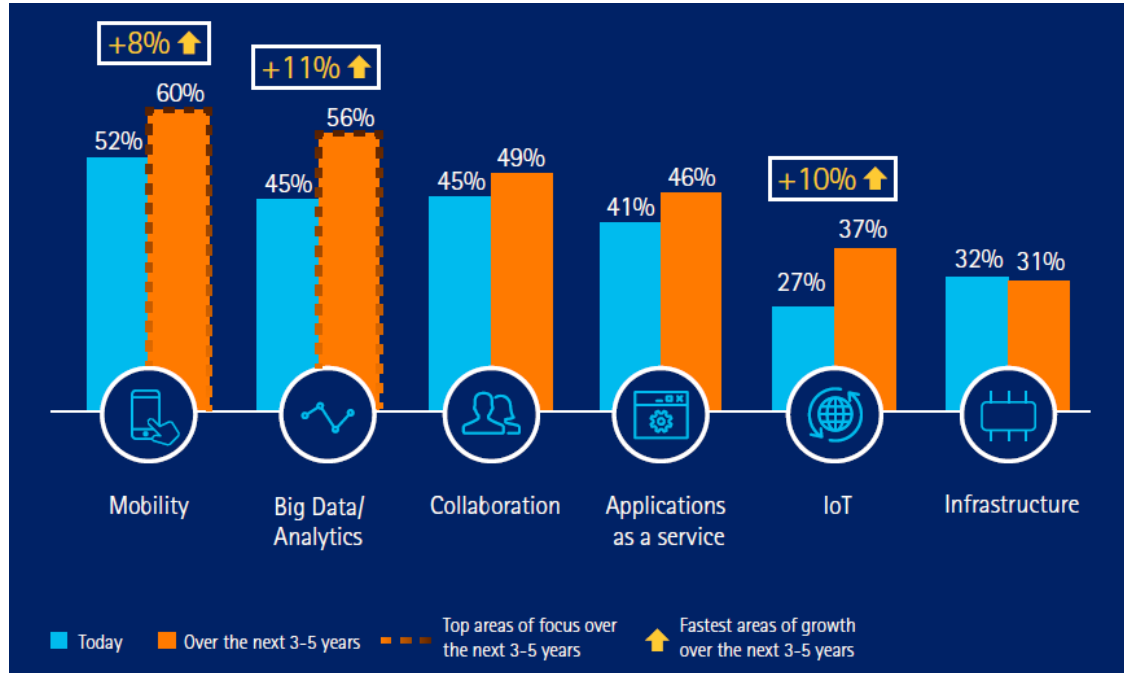
Source : The 2016 Upstream Oil & Gas Digital Trends Survey – conduced on behalf of Accenture & Microsoft

Oil & Gas CIOs
Prepare for a Quantum Shift in Upstream Modelling

Upstream O&G CIOs need to prepare for how digital technologies will radically change the way geoscience and reservoir engineers' work comes into focus. The geoscience community is already conducting research projects with cloud high-performance computing, big data analytics and cognitive computing.

Key Findings

- Hybrid infrastructures that integrate traditional high-performance computing (HPC) clusters with cloud-based HPC environments are emerging as a scalable and pay-on-demand solution.

- The use of "big data" analytic modeling of hydrocarbon reservoirs, aka nonphysics-based modeling (NPM), can better define uncertainties and reduce risk than traditional models.

- R&D projects to create cognitive computing solutions capable of augmenting or replacing human geoscientists are showing promise and will require new IT approaches for information and infrastructure management.
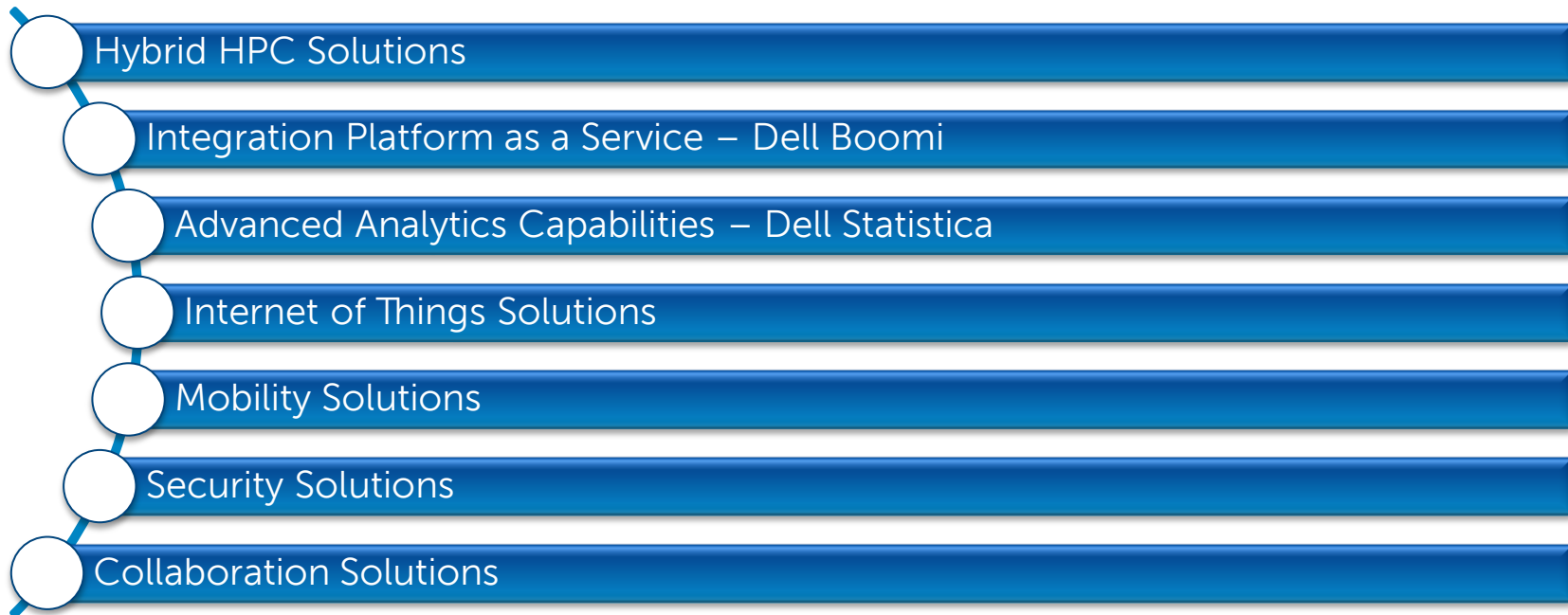
Recommendations

- Develop talent in IT now in quantitative analytics (e.g., data scientists), agile programming and project management.

- Deploy this talent in flexible teams that engage multiple geoscience teams simultaneously and gradually build a technical computing center of excellence (COE).

- Shift to a bimodal IT strategy that simultaneously emphasizes sustained, incremental improvements in upstream modeling architecture, while encouraging and enabling fast, innovative and risky experiments.
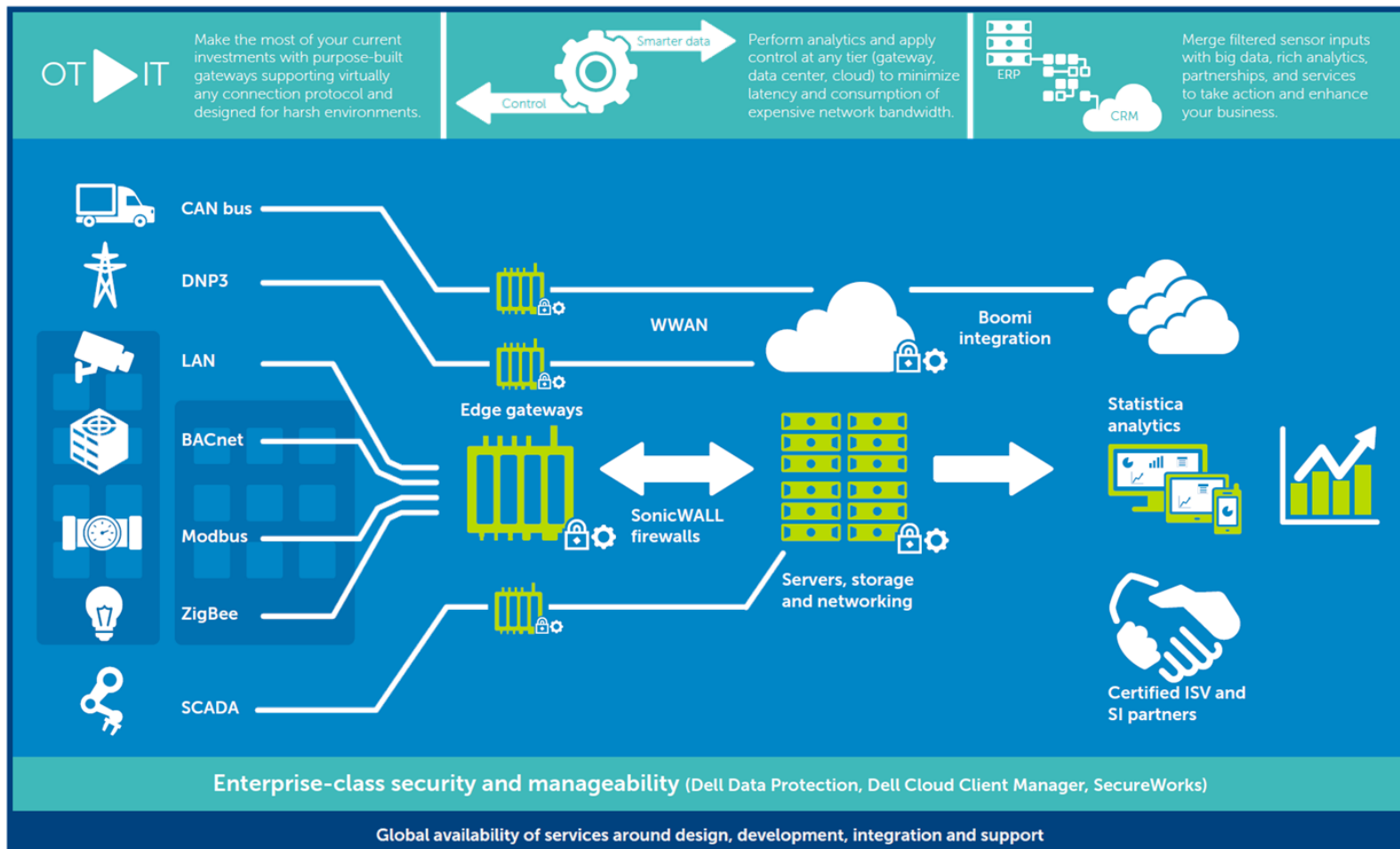
Why Dell

Why Dell

Hybrid HPC Solutions

Integration Platform as a Service – Dell Boomi

Advanced Analytics Capabilities – Dell Statistica

Internet of Things Solutions

Mobility Solutions

Security Solutions

Collaboration Solutions

Dell Internet of Things framework

Enabling flexible, distributed IoT solutions that can be tailored to specific verticals and use cases

OT ▶ IT

Make the most of your current investments with purpose-built gateways supporting virtually any connection protocol and designed for harsh environments.

Smarter data

Control

Perform analytics and apply control at any tier (gateway, data center, cloud) to minimize latency and consumption of expensive network bandwidth.

ERP

CRM

Merge filtered sensor inputs with big data, rich analytics, partnerships, and services to take action and enhance your business.

CAN bus

DNP3

LAN

BACnet

Modbus

ZigBee

SCADA

Edge gateways

WWAN

Boomi integration

SonicWALL firewalls

Servers, storage and networking

Statistica analytics

Certified ISV and SI partners

Enterprise-class security and manageability (Dell Data Protection, Dell Cloud Client Manager, SecureWorks)

Global availability of services around design, development, integration and support

Upstream Analytics

Optimize exploration & production activities

- Optimize production
- Reduce costs
- Reservoir characterization

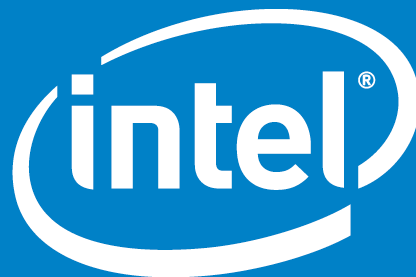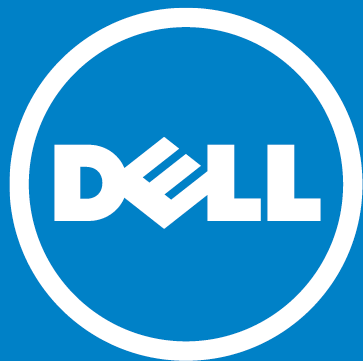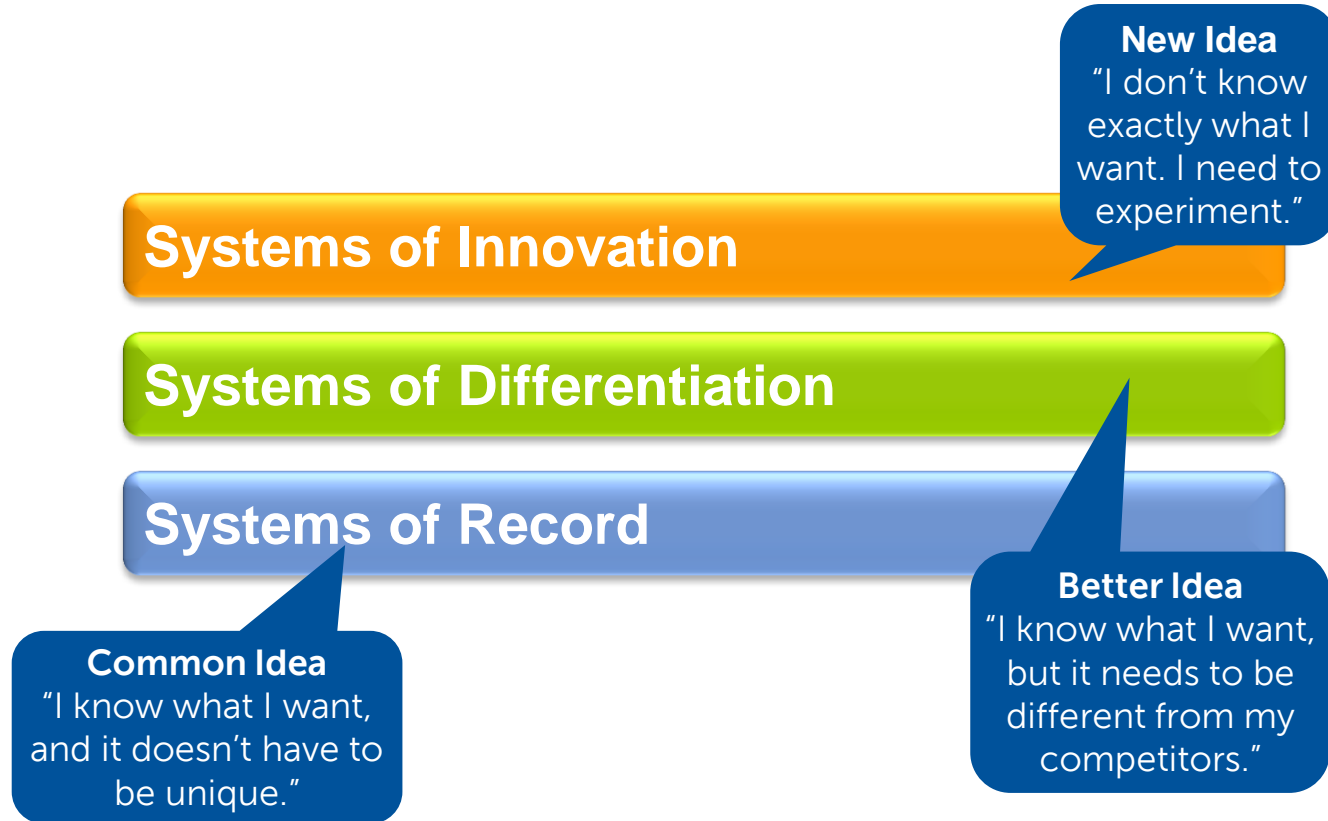| Business Objective |
| --- |
| Exploration and production optimization - integrate disparate data across sensors, geology, geophysics, and reservoir engineering |
| Increase reliability or reserves - spatial relationships between geological elements and petro physical properties |
| Optimize oil exploration - create predictive models of well performance |
| Reduce production outages, maintenance costs and work hours by predicting failure of field equipment |
| Predict production performance and reserves with forecasting |
| Reservoir characterization - combine geostatistical and advanced analytics |
| Identify drivers and indicators of well production, determine optimal drilling and completion programs |
| Supplier quality monitoring - automate supplier reviews - monitor, aggregate, configure, and centralize data (materials, parts, specs) from multiple suppliers. |
| Achieve regulatory compliance and safety - product traceability, SPC, root cause analysis, stability and shelf life analysis, validated reporting |
| Emissions reduction – meet regulatory needs and improve public health |

Thank you

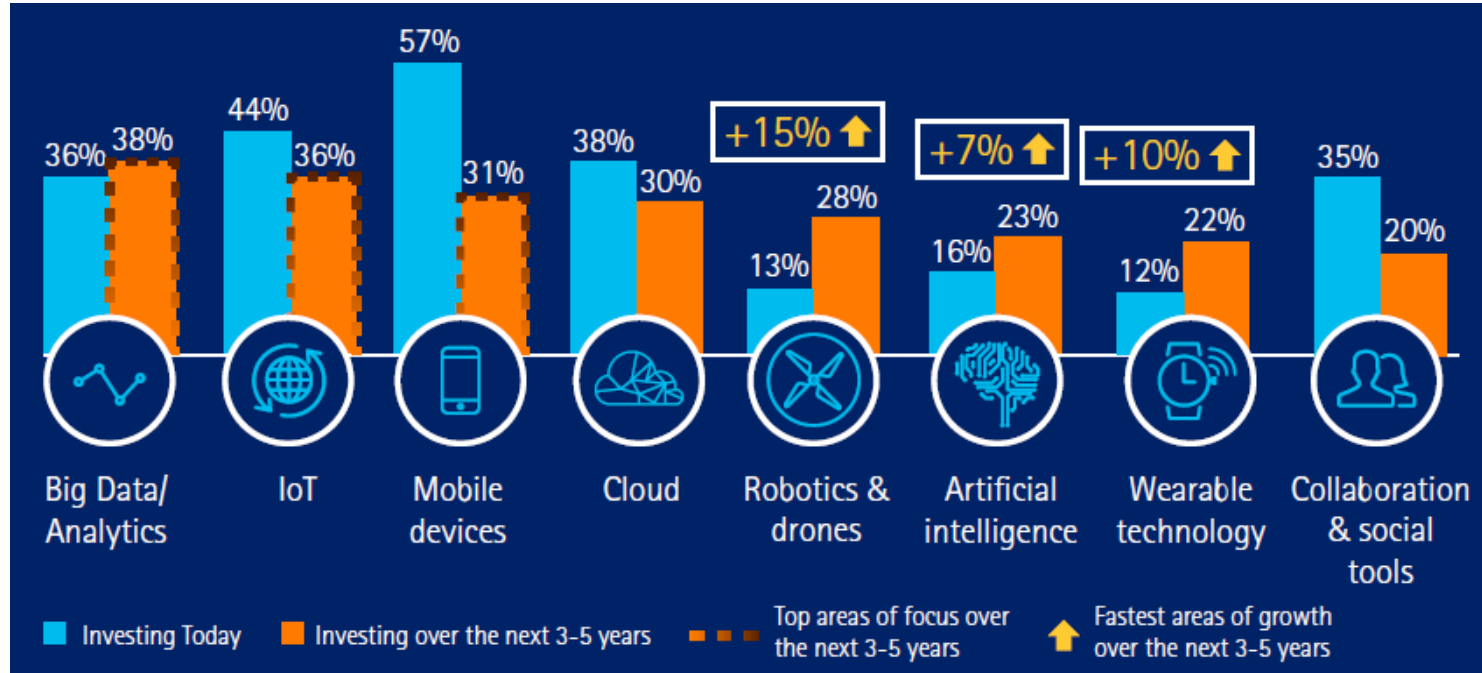John McLaren

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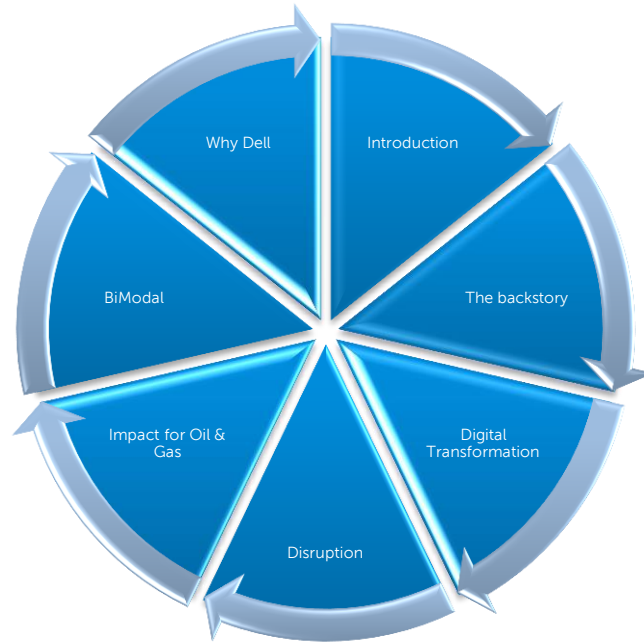Source : The 2016 Upstream Oil & Gas Digital Trends Survey – conduced on behalf of Accenture & Microsoft

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