

# LANNER

WITNESS Conference

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## WITNESS Present and Future New Horizons



# SIMULATION

*Complexity*

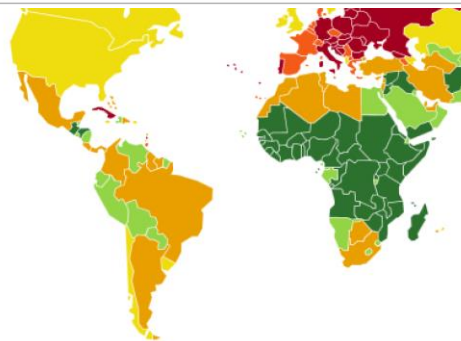
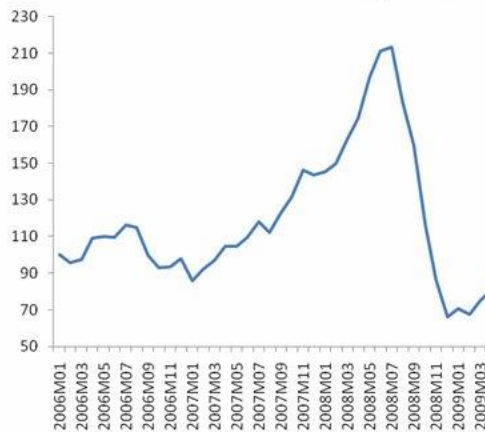
*Connectivity*

*Variability*

Predicting  
Process Performance

# Global Change - Variability, Uncertainty, Complexity

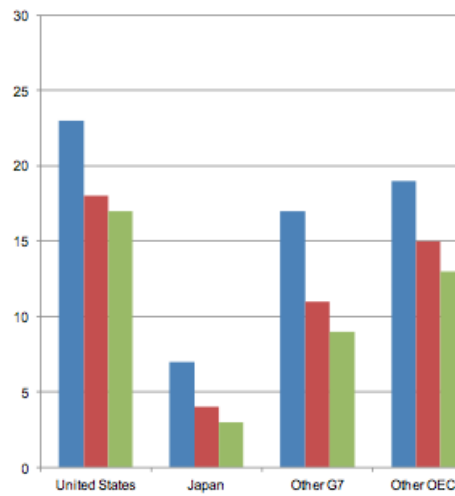
Chart 1: Index of average oil prices in world trade



Growths and Declines of Working-Age Populations (Ages 20-59) Relative to 2010

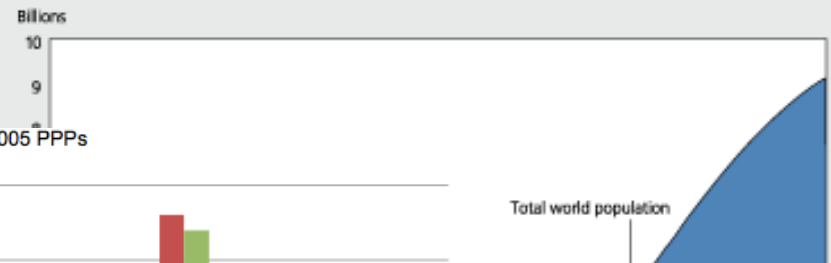
Below -10% -10% to 0% 0% to 10% 10% to 30% 30% to 60% Greater than 60%

Percent of world GDP, real GDP at 2005 PPPs

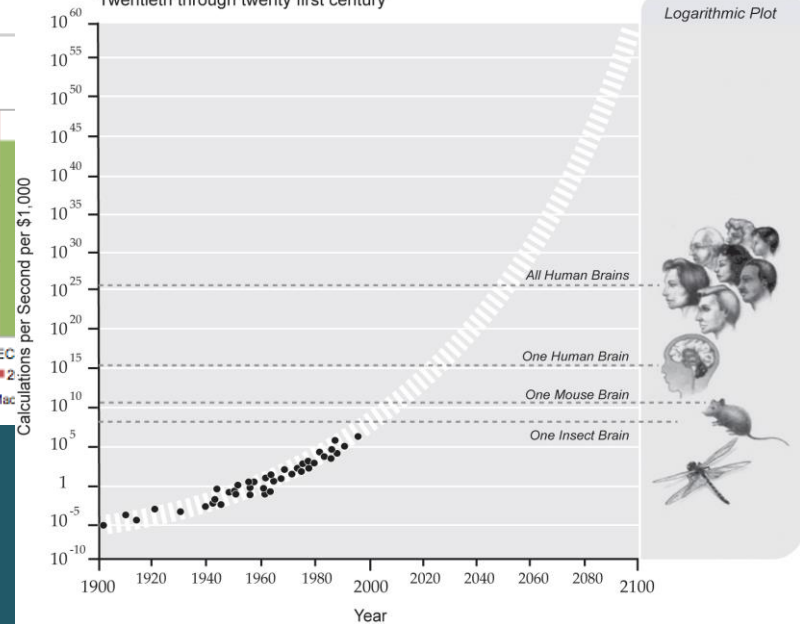


Source: OECD (2007) Long-term Growth Scenarios, Working Party No. 1 on Macroeconomics, ECOFIN, WP1(2012)5

Figure 3.1 World population, 1750-2050



Exponential Growth of Computing  
Twentieth through twenty first century



Dealing with disruption will be the new Business-As Usual

# Global forces which will impact EVERYTHING!

- New products, materials & processes
- Disruptive competitors will emerge
- Personalised products and new markets
- Circular economy to reduce emissions
- Global interconnected supply chains
- Planning cycles will compress
- Manufacturing and service provision will become increasingly integrated
- Technologies (IOT) will increase productivity to new levels



Industry 4.0: transforming manufacturing, embracing digital



## Bigger than the Industrial Revolution

# Enterprise Management Impacts

- Many traditional management theories will no longer apply
- Management decision-making will be less certain
- Balancing decision trade-offs will become the norm.



***"There will be a sea-change in management and the tools they use in the next 5 years"***

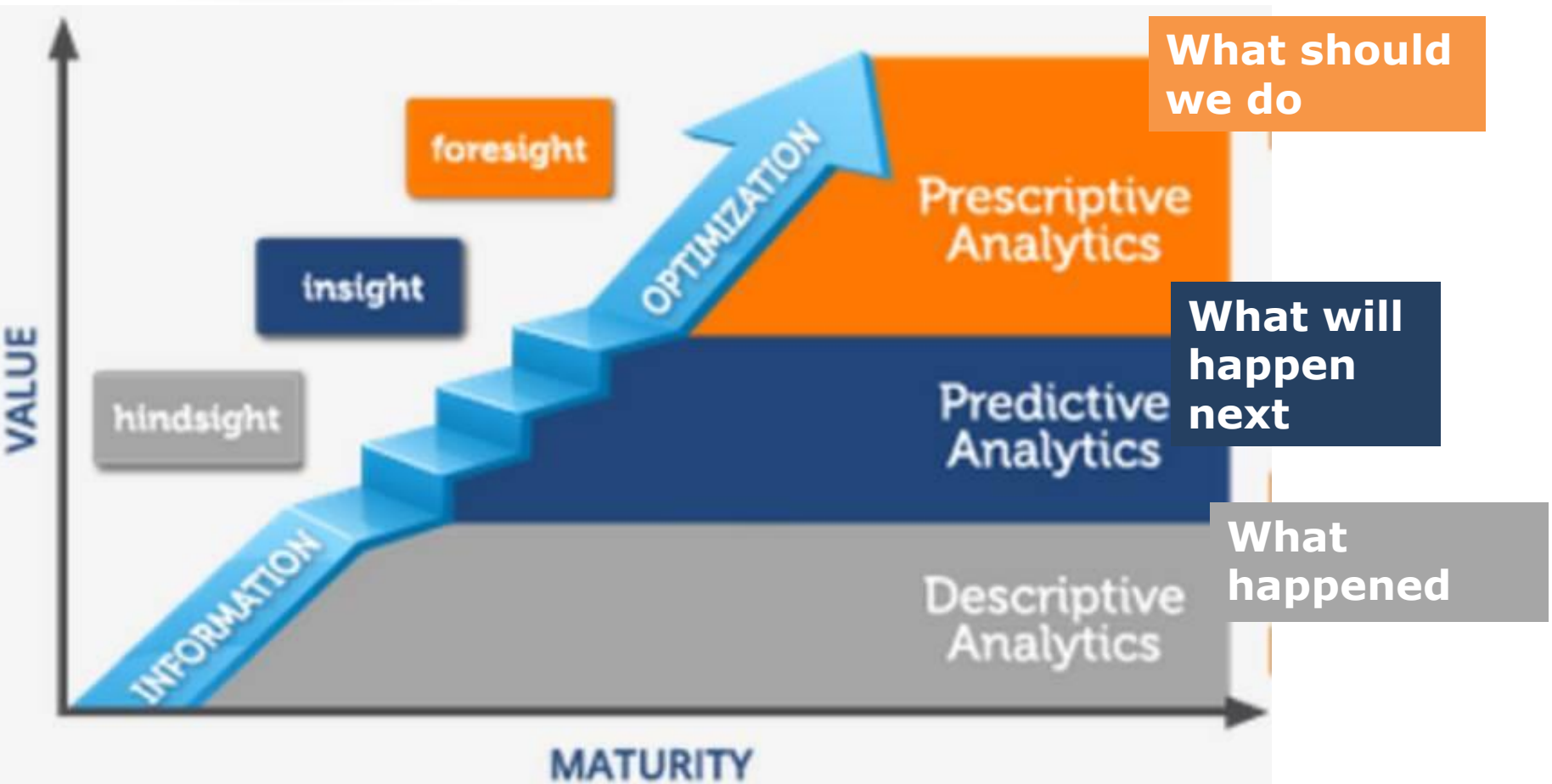


**CEO Accenture  
Pierre Naderme**

- The use of predictive data and analytics will accelerate
- New generations of simulation uses and users will be created!



# The Case for Simulation – Growth in Analytics



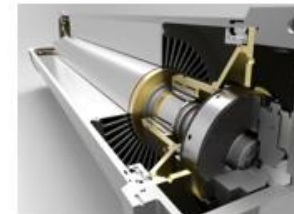


ENGINEERING  
EXCELLENCE  
1815 - 2015



**F4N**  
Fit For Nuclear

## Hayward Tyler Ltd



### What Hayward Tyler do

Design, engineer, manufacture & service  
electric motors for mission critical  
applications in the energy sector worldwide





- UK plant growth to double to Production by 2020
- Transformation of Manufacturing
- Design new processes and equipment
- Manage change
- Inform staff

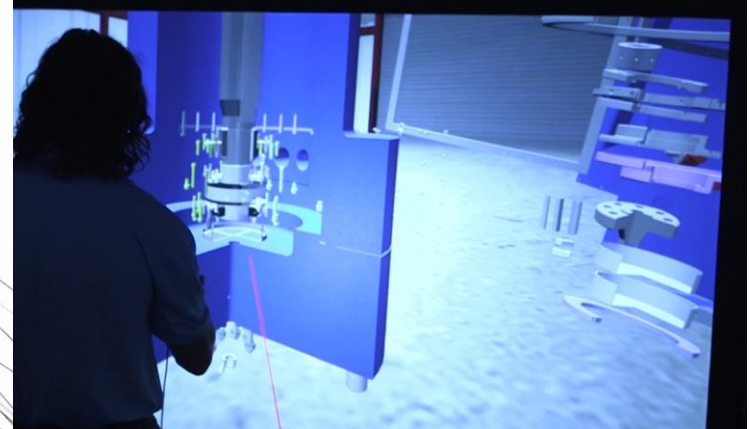
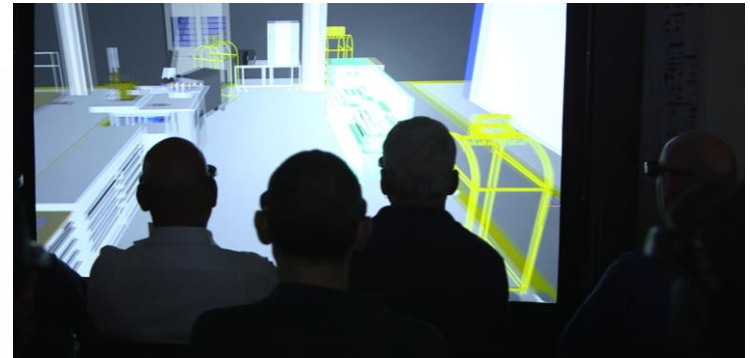
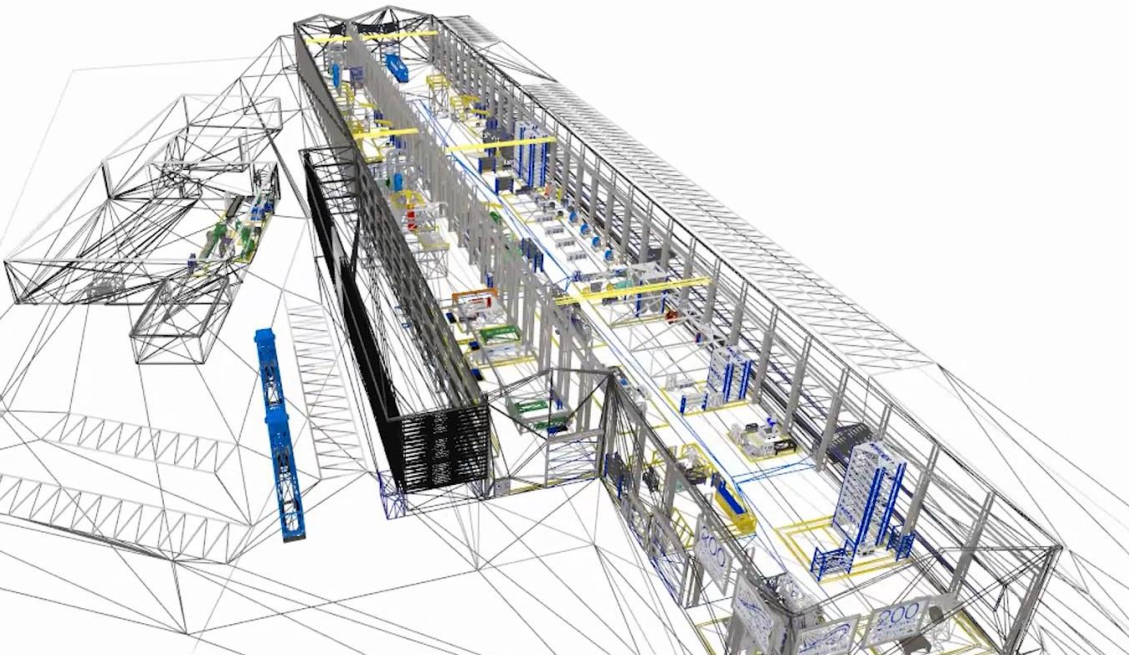
## Capital Expenditure Decisions

- How many Cranes?
- How many Trucks?
- How many Machines?

Hayward Tyler created a [Virtual Factory](#) which presented a highly visible picture of Hayward Tyler's manufacturing operations as they evolve over the next 5-10 years.



# Hayward Tyler - Virtual Factory



# St Louis (USA) hospital campus renewal



Washington University Medical Center (WUMC) includes;

- The Barnes-Jewish Hospital
- St Louis Children's Hospital
- The Washington University School of Medicine

- Test integrated Process and Facility Design
- Involving Doctors, Clinical and Support Staff
- Many departments and phases

**BJC** HealthCare

**JACOBS**

# Simple Steps to Success



Your fancy new processes are alien and hostile until you've simulated and refined them based on what you learn. Do it. It's not a dark science or a play toy. It's common sense.

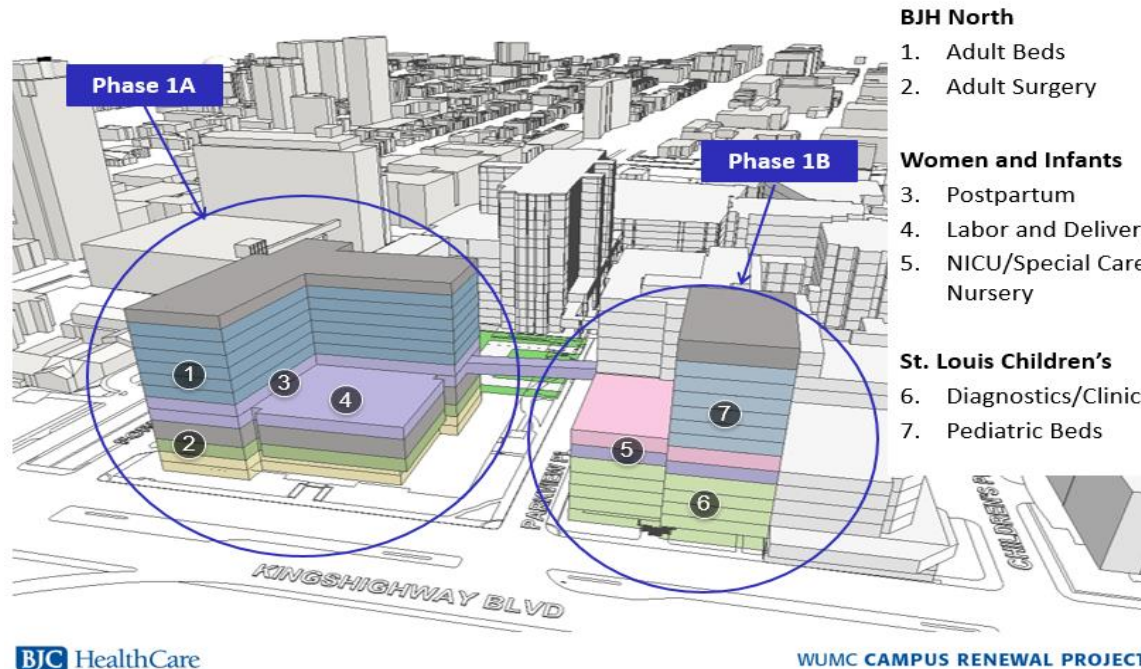


David W. McCoy, managing vice president and Fellow,  
**Gartner**





# St Louis (USA) hospital campus renewal



"The WITNESS model took all subjectivity away and enabled us to move forward with fact-based decisions rather than allowing emotions to lead us."

Margaret Tobin, Campus Renewal Activation Lead

# WITNESS Direction and Strategy

- Four of our Key Strategies as we develop WITNESS
  - Improve Ease of Use and Deployment
  - Build in Intelligence and Structure wherever possible
  - Enable Wide Integration
  - Provide the Excellent Visualisation and Communication

**Quality** – respect that the customer is using WITNESS to help make decisions affecting people's lives and company profitability



Previous Releases – ease & structure/intelligence

## ✓ **Speed to Model**

- WITNESS 12
  - Modern large working surface
  - Improvement in user interaction (drag/drop & undo)
  - SCHEDULE Expression



## ✓ **Speed to Answer**

- Quickly deliver the answers
- WITNESS 13
  - Experimenter
  - Multi-core replications & HPC



## ✓ Great to show

- Great 3D - when you need it!
- WITNESS 14
  - New Quick3D – Professional presentation in '1 click'
  - High performance – Speed and Quality
- All 3D linkage setup INSIDE WITNESS. (Object Links, Queue positions)
- Upgrade path to Visionary Render for WITNESS by Virtualis
- Simulate inside an Immersive 3D world – screens, walls, caves
  - Import shapes from 3D CAD
  - Flythrough recording, higher shape import limits
  - Full facility & design review capability – incl. collision detection



## Proven in Hayward Tyler

# More help and support and guidance

- Customer Portal
  - Support tickets
  - Videos
  - Solutions
  - Product downloads
  - Webinar Recordings



# Next WITNESS Release – End Q1 2016

- Modern and Simple
  - New Toolbar and Type Icons
  - Flat Windows 10 styling
  - Lean Start-up model
  - New Floating Toolbar Property edit



- Consistent with our Methodology
  - Concept Model
  - Initial Layout
  - Detailed layout
- Technical
  - Improved animation
  - Improved calculations for fluids
  - New 'Move' command designed for Cranes

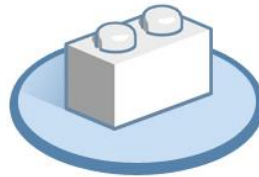
# Prototype Default Element Icons

## Model Tree

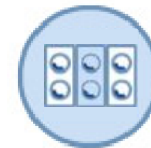
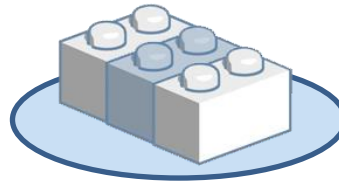
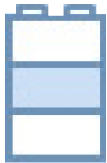
## Designer

## Design Surface (Top Down)

Part



Buffer/  
Queue



Activity/  
Machine



Resource



Quick3D  
(Full 3D  
Object -  
Consistent)



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