

# How IoT changes Manufacturing: Internet of Things & Industry 4.0



## IoT Transforms

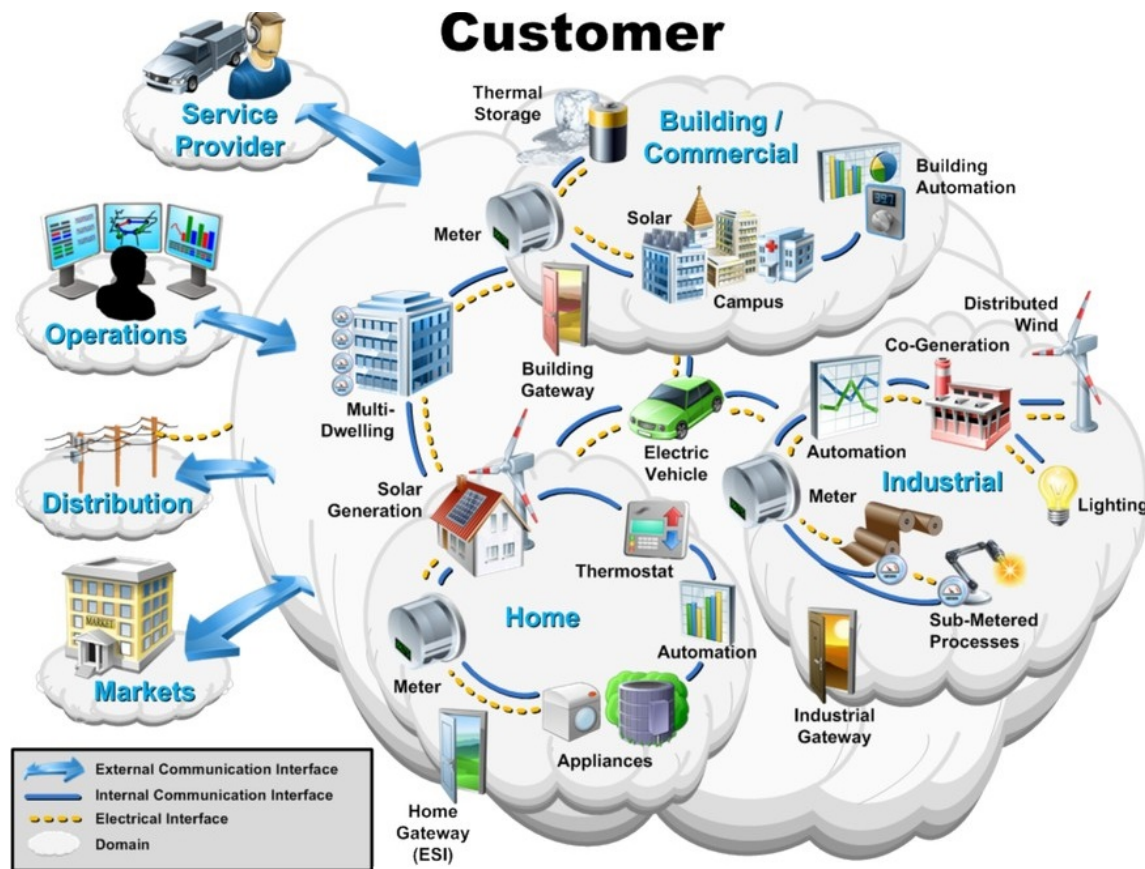
Event: **Connected Manufacturing**

Speaker: Dr Roy Woodhead

Date: 17<sup>th</sup> May 2017

# Internet of Things

A world in which billions of devices are connected to the Internet

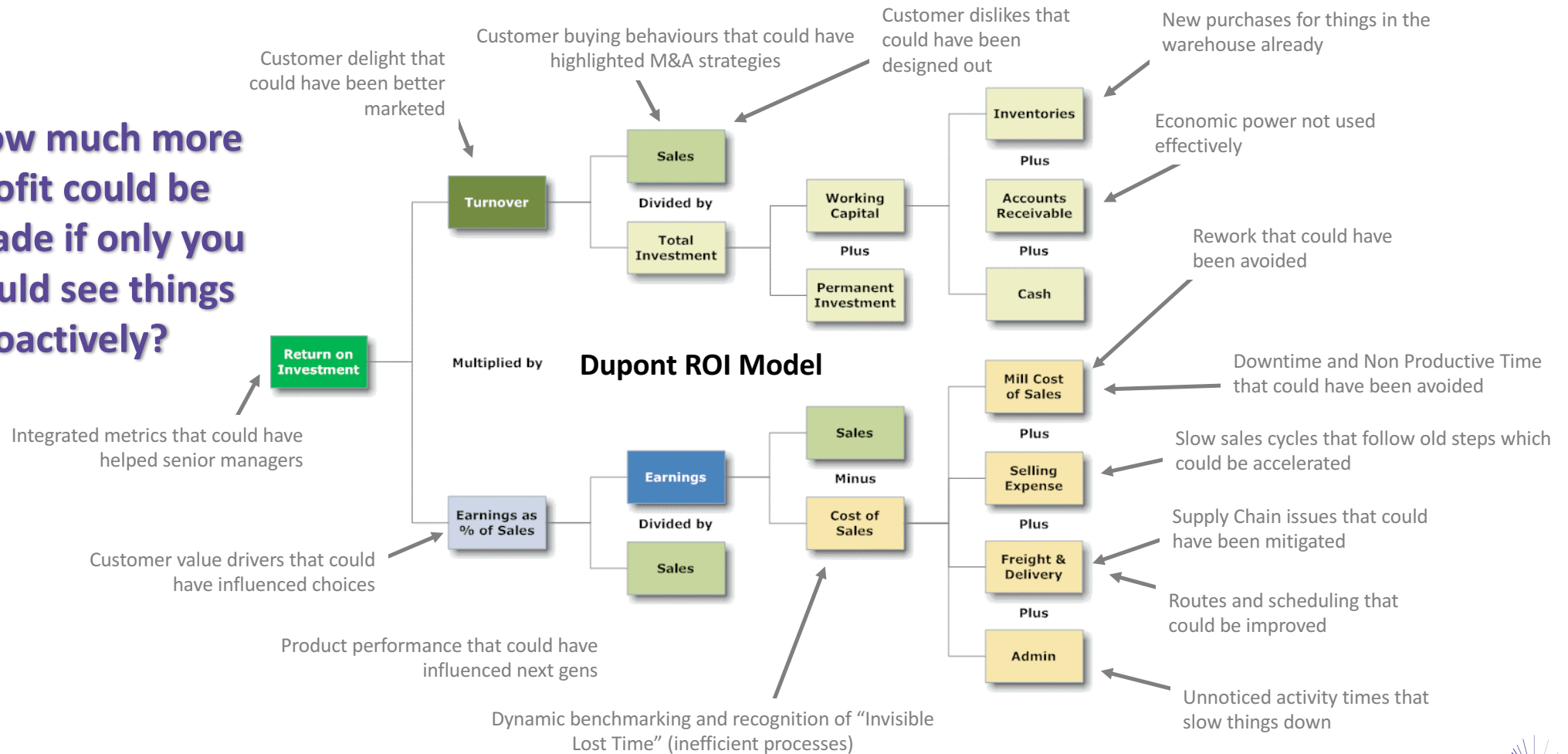


Information flows and predictive analytics become more important in this new world

Source: <http://dreamreport.net/reporting-as-a-service-raas-a-subset-of-software-as-a-service-saas-for-the-internet-of-things-iiot/>

# Do you know the cost of Information blind spots?

How much more profit could be made if only you could see things proactively?



Source for the image of the Dupont ROI Model: <http://www.nickols.us/dupont.htm>

# Are you riding the Digital wave or standing under it?



Source of image: <http://photorator.com/photo/32539/a-crashing-wave-on-the-beach-photo-by-chris-burkard->

Source of EU Briefing paper:  
[http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/568337/EPRS\\_BRI\(2015\)568337\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/568337/EPRS_BRI(2015)568337_EN.pdf)



# Can you sense a brighter future?

It's about improving the quality of 'all' decisions made within the enterprise:



Control Rooms of the future will be in the hands of employees, fully automated elsewhere

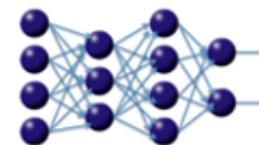
Industry 4.0 is the digitisation of manufacturing:

- Real Time Insights
- Big Data
- Artificial Intelligence
- Machine Learning
- Machine 2 Machine
- Machine 2 Human
- Human 2 Machine

## Big Data and Machine Learning



Source:  
<https://deeplearningmania.quora.com/>



Source:  
<http://www.33rdsquare.com/2015/02/h2o-wants-to-help-you-create-ai-apps.html>

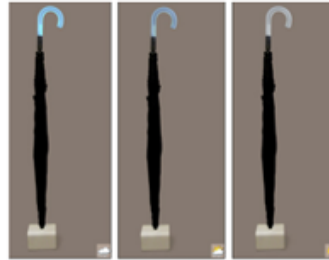
# You can control your destiny

Connected Cars



Source: <http://www.informationsecuritybuzz.com/articles/iot-security-protecting-connected-cars/>

Smart Umbrella predicts weather



Source: <http://www.materious.com/#/projects/forecast/>

E2E production oversight



Source: <http://www.theniceway.com/projects5.php>

**Manufacturing  
Things**

**The Paradigm Shift**

**Selling what  
Smart-Things do as a  
service**

Home Automation



Source: <http://techpp.com/2013/10/16/best-internet-of-things-devices/>

Smart Production



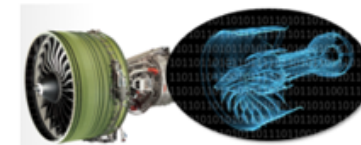
Source: <https://www.theengineer.co.uk/inspiring-minds-with-iot/>

Delivered Insights



Source: <http://blogs.sas.com/content/mfg/2015/12/11/sensorless-industrial-iot-improves-quality/>

Digital Twins

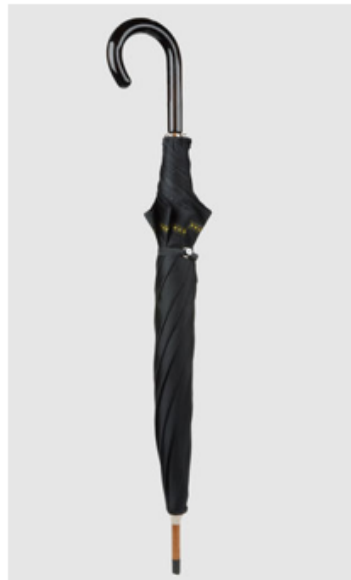


Source: <http://www.geglobalresearch.com/impact/physical-digital-the-new-power-couple>

# The Transformational Idea journey

## Transactional Thinking:

Umbrella for £5



## Connected Thinking:

Umbrella for £15



Source: <http://realitypod.com/2016/03/29/this-latest-high-tech-umbrella-features-buzzers-gopro-mounts-sensors/>



## Relational Thinking:

Umbrella for £1 / month

- Finger Print Recognition
- Weather Prediction
- Pedestrian route planning
- Blood Pressure
- Body temperature
- Heart rate monitoring
- Health alerts to loved ones





# Work with partners you can trust



Seamless Management capability



Insights where they count



Better understanding of customer buying behaviours

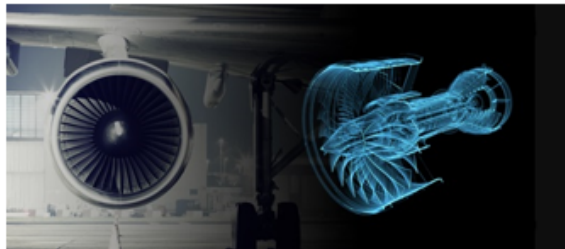


Location Based Services

## 6 Context for improved Profitability:

- New products
- New services
- New methods of production
- New sources of Supply
- New markets
- New ways to organise

Real Time Monitoring



Wearables



# The sort of things you need to get started

**Digital Vision** – an outline of your transformation from a manufacturer of things to what smart-things can do as a service that helps others engage

**Digital Strategy** – a plan that straddles existing (selling things) and new paradigms (things as a service) that enables a successful evolution

**Strategic Planning** – internal insights from Scenario Planning, Competitor Analysis and Business Analysis which helps you ‘anticipate and adapt’ better than rivals

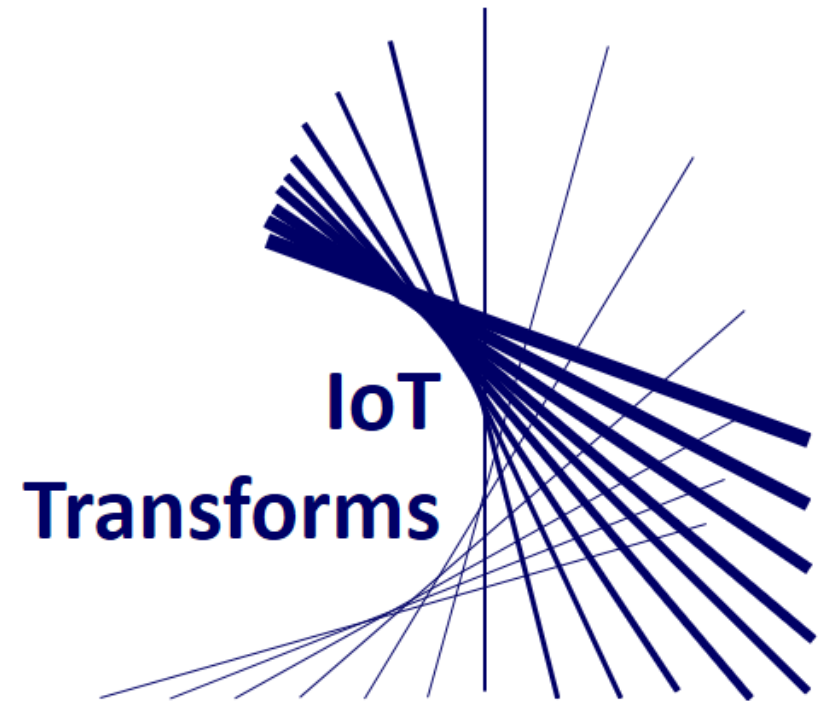
**‘Time to Value’ analysis** – a quantified view of the constraints (e.g. finance) you must work within to see best options to maximise ROI

**Implementation plans** – a shared plan made with your internal teams that outlines how to transform whilst everyone is busy in existing day jobs



www.alamy.com - DG5WMG

Thank you



**Transformations unlocked by the  
Internet of Things**

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