

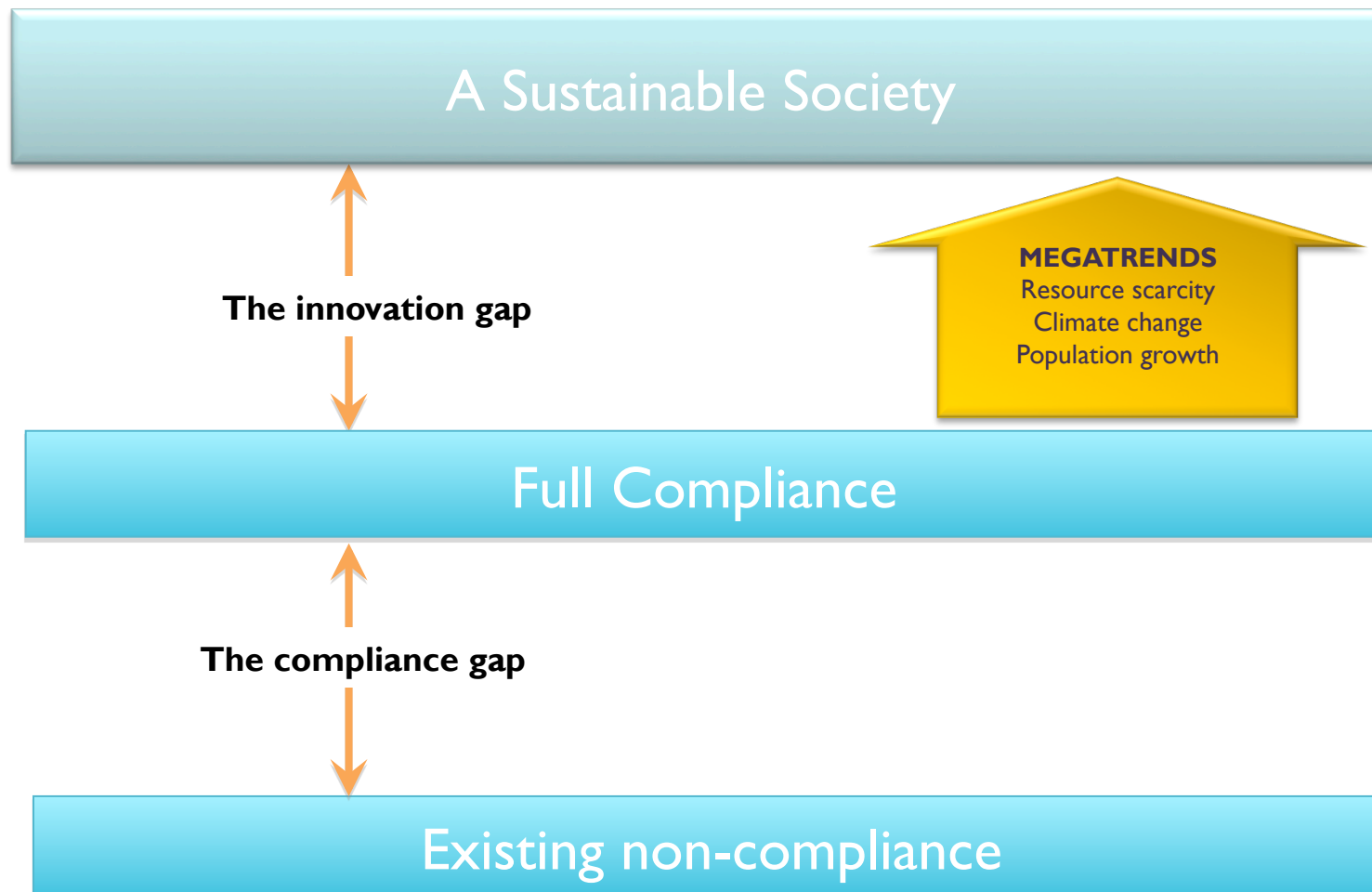
# 21<sup>st</sup> Century Regulatory Innovation

Can ICT support regulatory reform?

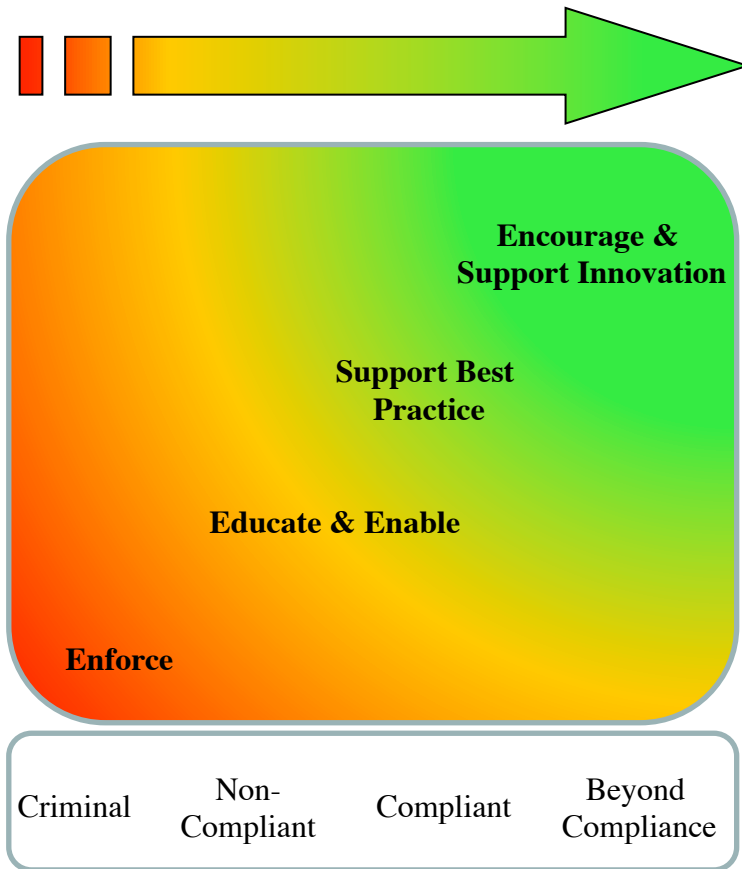
Colin Armstrong  
Innovative Strategies Directorate



# 21<sup>st</sup> Century Regulatory Innovation



Our proposals will ensure those who:



- **deliberately breach** will find regulation to be powerful, expensive and swift

- **occasionally breach** environmental laws through lack of understanding or capacity will find regulation to be supportive and effective in bringing them into compliance

- are **regularly compliant** will find regulation to be cheap, quick and easy.

- want to go **beyond compliance** to unlock economic opportunities through innovation will be supported and encouraged

## Current permitting system

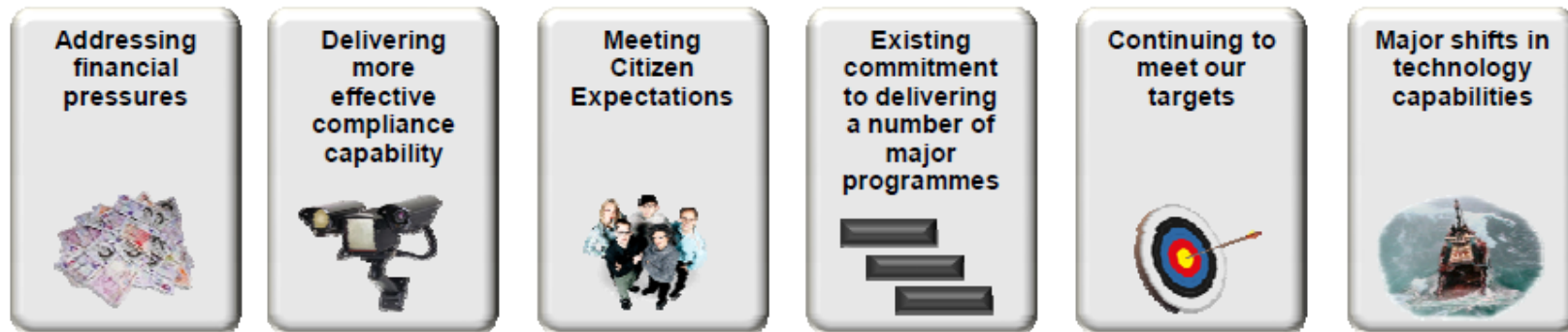
- Separate regimes governed by over 40 pieces of legislation
- More than 50 different permit types
- Managed by multiple teams with their own rules, guidance, forms and ICT systems

## Development of an integrated permitting system

- NIEA would like to be able to issue a single, fully integrated permit covering all environmental controls that relate to the activities being undertaken at a site.
- Will look to develop innovative approaches to permitting e.g. corporate permits

# DOE TODAY.....

## Challenges in an ANALOGUE world



**Reform**

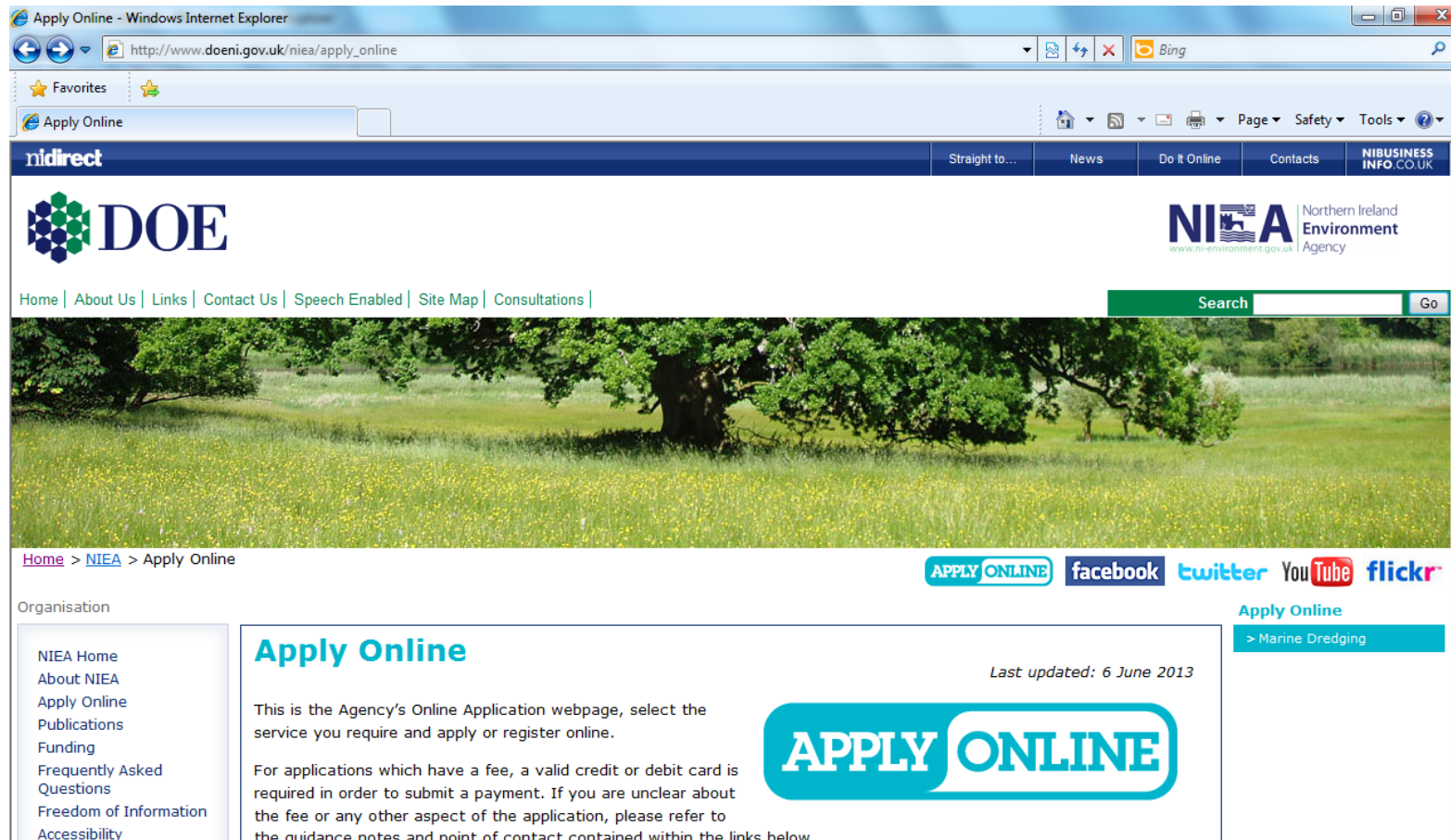
**Legislative Changes**

**Creates a complex & challenging change agenda**

DOE Digital Strategy 2013 - 2016

# Current use of ICT for information collection

## - Online licence applications





# Current use of ICT for information collection

- Inspectors and samplers using digital pen and paper system



Survey Year	<input type="text" value="11"/>		
Purpose	<input type="text" value="LMA Monitoring"/>		
Purpose-Other	<input type="text" value="TEST 123"/>		
Season Sampled	<input type="text" value="SPRING"/>		
Sample Day	<input type="text" value="10"/> Months	<input type="text" value="02"/> Year	<input type="text" value="2011"/>
Sample Time	<input type="text" value="12.51 am"/>		
Site Reference	<input type="text" value="ABC"/>	<input type="text" value="12345"/>	
Watercourse	<input type="text" value="UPPER MOY"/>		
Location	<input type="text" value="MOY co ARMAGH"/>		
Catchment Area	<input type="text" value="ARMAGH"/>		
Grid Reference	<input type="text" value="IIIB"/>	<input type="text" value="123400"/>	<input type="text" value="543200"/>
Width	<input type="text" value="123"/>	Average Depth	<input type="text" value="25"/>
Boulders/Cobbles	<input type="text" value="321"/>	Sand	<input type="text" value="25"/>
Pebbles/Gravel	<input type="text" value="543"/>	Silt/Clay	<input type="text" value="50"/>
Sampling Method	<input type="text" value="07"/>		
Sampler Initials	<input type="text" value="MG"/>		
Watch No	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
Chemical Sample	<input type="text" value=""/>		
Diatomaceous Algae	<input type="text" value="75"/>	<input type="text" value="5"/>	
Vaucheria	<input type="text" value="15"/>	<input type="text" value="5"/>	

# Current use of ICT for information collection

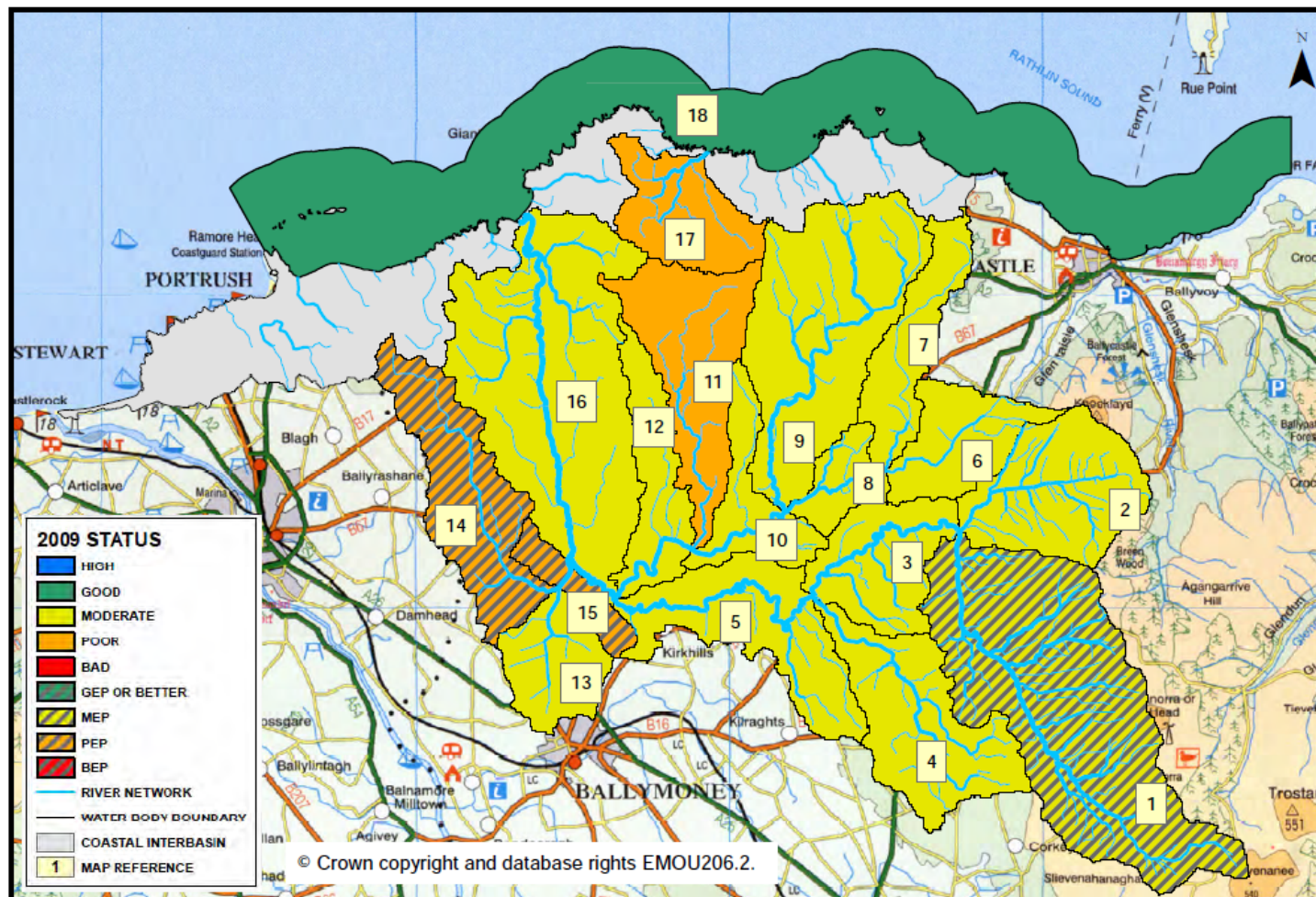
- In-situ monitoring with GSM
- Investigative tool for high risk/variable sites



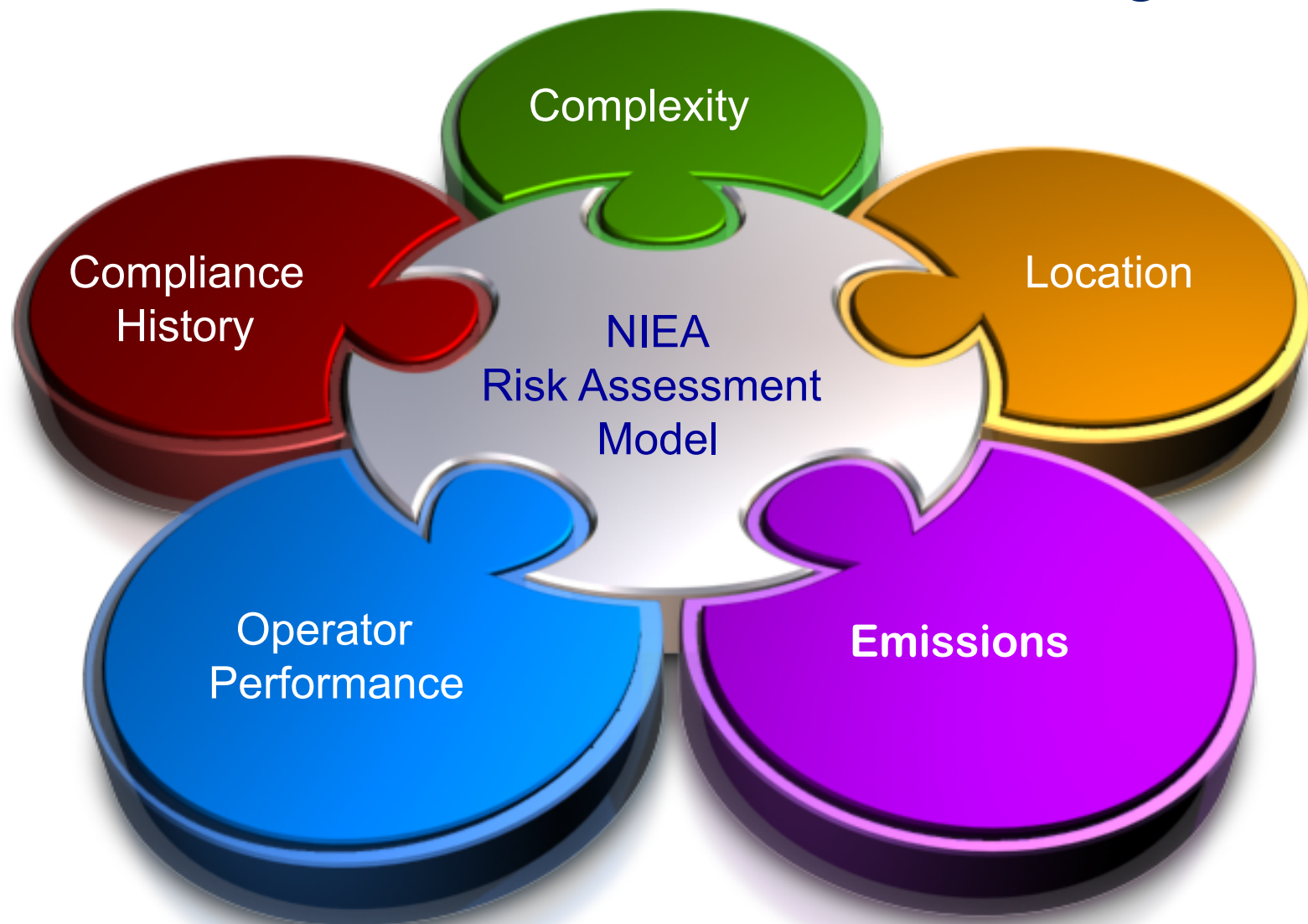


# Current use of ICT for information analysis

## - Geographical Information Systems



# Current use of ICT for decision making



# Review of current use of ICT

- 60 bespoke databases
- Little capacity for interoperability & interface between systems
- No agency wide standard for data definition to enable data sharing
- Data manually transferred between system
- Limited alignment of information outputs with reporting and monitoring needs

# DOE Digital Strategy 2013 - 2016

## The future is digital

*"We need to create a **"digital edge"**, where digital information and physical resources combine in new ways to create added value and benefits.*

*Enterprises seeking a digital edge transform their processes, **business models**, and the **customer experience** by exploiting the pervasive digital connections and enablers between **Places, Systems, People & Things** through **cloud, mobile, social and information**.*

*Any organisation large or small, old or new can use digital technology to create a winning edge for its business."*

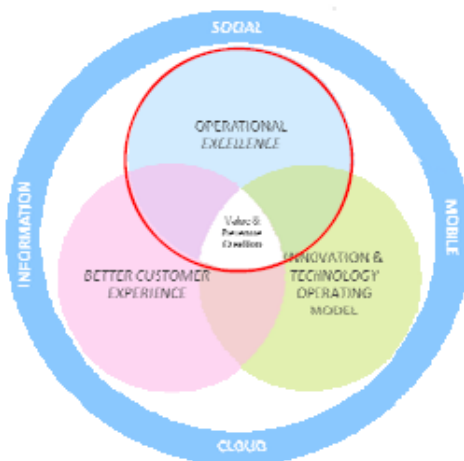
Mark McDonald - Group vice president and Gartner Fellow, Gartner Executive Programs



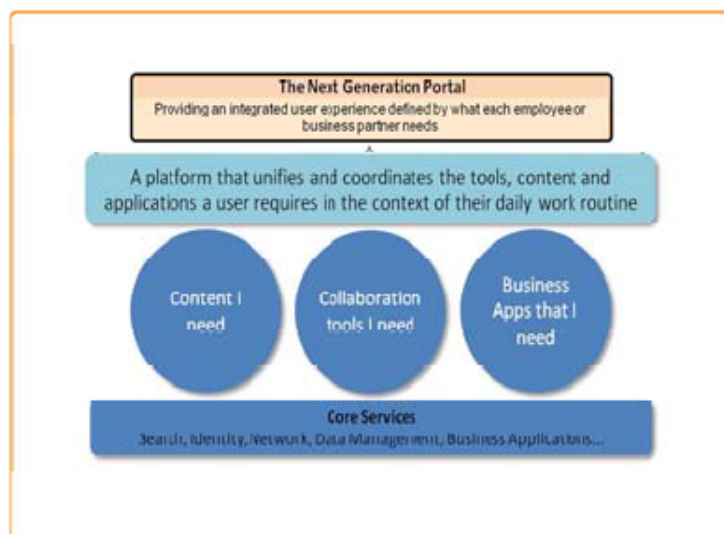


# OPERATIONAL EXCELLENCE

Achieved by.....

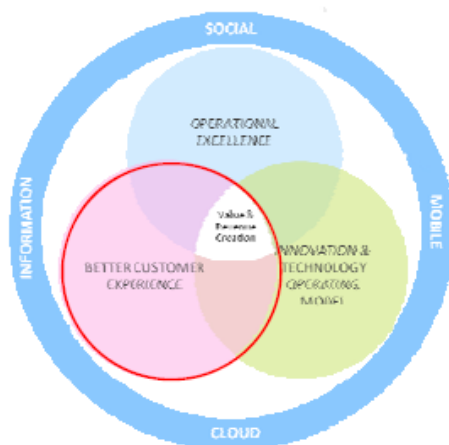


The re-engineering and optimisation of business processes through the application of technology, changes in organisation and behaviours and better use of information



## BENEFITS:

- ✓ Everything where and when I need it
- ✓ Information assets known
- ✓ Better decision making
- ✓ Improved internal communications (*better informed workforce*)
- ✓ Improved productivity (*motivated workforce*)
- ✓ Focus on priorities
- ✓ Creating NEW CAPABILITIES



## DIGITAL REALITY

The External Customer and the Internal Customer

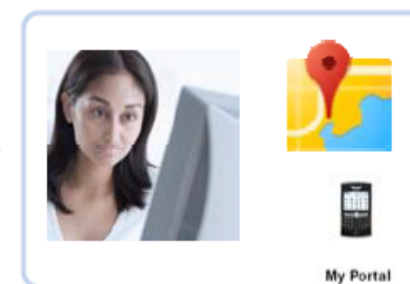
### A suspected pollution incident



Tony lives on the shores of Belfast Lough. He's 19, at university and spends much of his free time on **Twitter** and **Facebook**. He's recently noticed a foul smell where water feeds into the Lough and although he's not much bothered it is a big deal to his mum!



Within 2 minutes he has taken a photo of the offending area on his **iPad** and uploaded it together with some details to the 'Suspected Pollution Incident' twitter account. Geraldine in DOE is alerted from **#pollutionreporting** Twitter account. Tony receives a short **Twitter** acknowledgement back.



She instantly saves the photo to the pollution incident system and is able to plot the exact location using the **GPS information** attached to the photo. The information is overlaid on a map identifying source causes, other reports etc. and is automatically alerted to the **smart phone** of the on-call case officer for follow up.

**BENEFITS** – instant citizen access and immediate action taken by DOE

# Role of ICT in regulatory reform

- Make regulatory processes less burdensome and faster for regulated businesses
- Support innovative businesses that use ICT effectively
- Improve environmental management through better use of information
  - not necessarily about collecting more data

# Conclusion

- NIEA will look to utilise ICT to support the delivery of its regulatory reform programme
- NIEA will develop partnerships with the DOE Technology and Innovation Unit, ICT providers and stakeholders to undertake innovation trials.



Our aim is to protect, conserve  
and promote our natural and built  
environment for the benefit of  
present and future generations.

