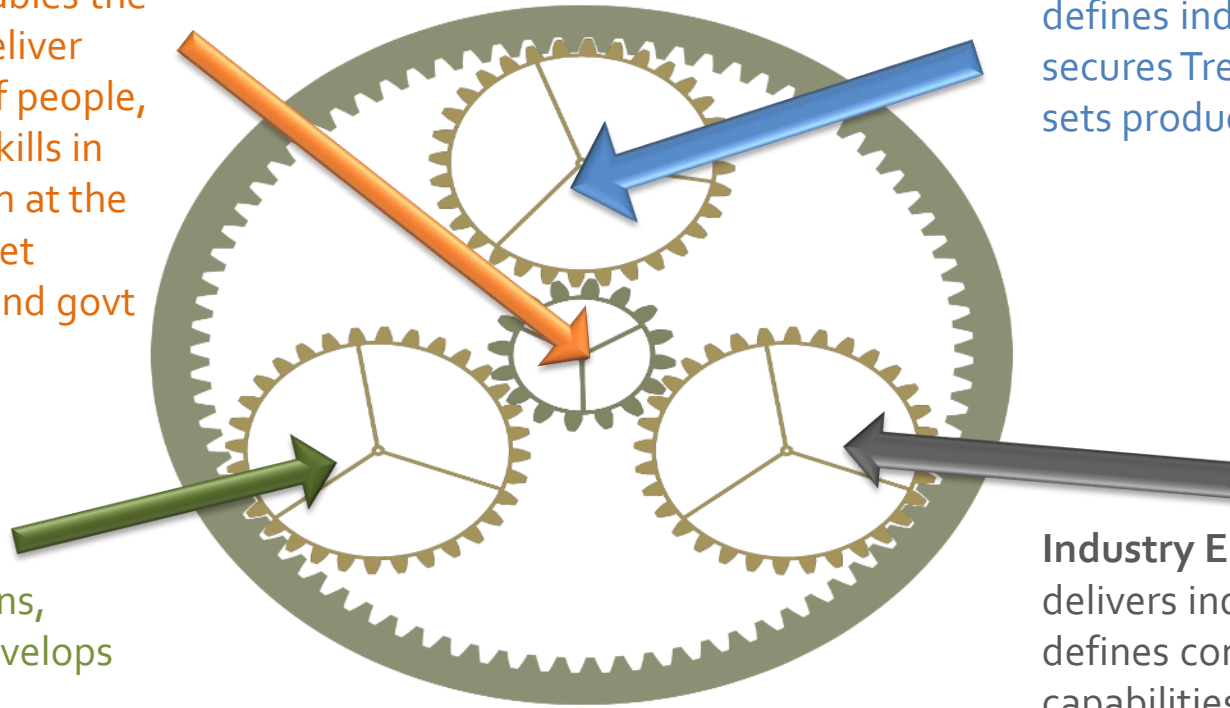




What can rail learn from Immersive Technologies?

NSAR - models future demand and enables the supply side to deliver right numbers of people, with the rights skills in the right location at the right time to meet industry needs and govt aspirations

Academia – trains, educates and develops talent, supports future industry demand requirements



Government - sets policy, defines industry strategy, secures Treasury funding, sets productivity frameworks

Industry Employers – delivers industry strategy, defines competencies, capabilities, roles, behaviours, secures funding, employs, nurtures and retains talent

What is NSAR and how does it fit in?

What's the challenge facing us?

Value	5-10%		10-20%		20%-40%+	
	0-18	18-36	36-48	48+		
Timeframe (months)	0-18	18-36	36-48	48+		
People	Team Dynamics	Workforce leveling, Training	Long term career development	Culture change		
Processes	Explicit method reuse	Documented processes	Continuous process improvement	ISO standards for continuous delivery		
Designs	Design templates	Repeat building same asset	Standard Assets	DfMA Asset Standards		
Contracts	Heavy lifting to document intent	Reuse / extend same framework	Small changes	Repeatable standard call off		
Technology	Project tools and templates	Automated design and reporting	Whole life asset management	Digital replicas of assets		
Resourcing	Consultants, contractors & sub contracts		Employees, trainees and long term-supplier relationships and talent development			

Productivity – HM Treasury study

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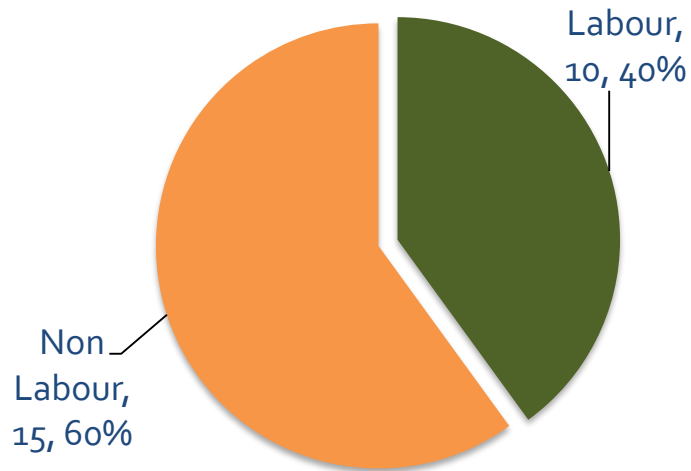
After 4 years, this could be worth > 10% productivity improvement

After 4 years, this could be worth > 5% productivity improvement

Productivity – HM Treasury study

Put it another way

Total Spend £25bn pa



Current rate of RPI is 1.9%, equivalent to £190m per annum

- In rail, we have wage inflation approaching 4%, equivalent to £400m per annum
- So we have a difference of over £200m per annum which will continue if we do nothing
- Therefore investing in skills development, training, changing culture and developing long term supplier relationships will alleviate the imbalance between the limited supply of labour and the increasing demand for it
- Making our people more skilled and productive is a fundamental challenge we face.

How can we address this?

- Typically the railways spends between **2 and 3 training days per person** per annum, mostly in compliance training rather skills training – the **UK average is 6 days per person**
- We need to **train more, in digital, using digital means**
- For us the benefits are clear:
 - It's **at least 30% cheaper** to train someone using VR / AR / Mixed Reality simulations
 - Increased user **engagement**
 - A more immersive **experience**
 - Environment **safety** (i.e. we can recreate high risk environments)
 - **Reduced** levels of operational **impact**
 - **Sharing** of IPR and **best practice** through licensing and finally
 - It's **fun** and
 - Delegates take more **knowledge** away with them which makes them more **economically productive**

What are the benefits?



Is it happening now?

- This is not about adopting clever technology for the sake of it
- There is a real business and industry benefit from using immersive technology to train your people
- Rail needs to be more productive
- It needs to move away from 'traditional' training methods
- It needs to attract a more diverse, younger workforce
- It needs to be safer
- It needs to be engage delegates better
- It needs to simulate environments and scenarios during training
- It needs to act at sector level and share best practice
- Most importantly, we use the technology to drive up productivity levels

So what have we learnt from Immersive Technologies?



Thank you