Non Technical Barriers to Innovation

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Innovation on the Railway
Customer Need
Finding a solution
Delivering the solution
Workshop

Easy isn’t it?
Is Innovation in today’s rail industry
TLG Definitions

Research, development and technology generates an improved capability to deliver better value for businesses and/or rail customers.

Innovation is changing process, behaviours and environment to generate increased value compared to industry best practice which could include but is not limited to opportunities created by using research, development and technology.

OR ...............
The purpose of Innovation

- Innovation is about creating or maintaining a competitive edge
- Technology is only an enabler
- So how should the rail industry innovate to maintain its competitive edge?

What are the challenges of introducing the next generation of complex safety critical technology?
How to Innovate (more successfully?)

Probably don’t start with the technology

I suggest you need to think about the following from the start:

• A clear customer need or challenge (an output specification)

• A way of finding the most suitable solution

• A way of delivering the solution
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Consider both the ultimate customer need and your own business need & don’t forget the competition!
Recognised customer needs/ challenges

- Increased Capacity
- Improved Performance
- Improved Connectivity
- Better customer experience
- Reduced Cost
- Economic Growth

- This can generate an output specification

But ………
But don’t forget the competition! An unrecognised need/ challenge?

- They didn’t see it coming..
- Ones we can see coming..
- What else?

Bla bla Car UK
Share the cost!

NOKIA
Connecting People

Kodak

Tesla

Uber
When is the best time to innovate?
When is the best time to innovate?
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Usually means finding a supplier with a solution or able to develop one
This is not new - Liverpool to Manchester Railway 1829

“Perseverance”

“Rocket”

“Novelty”

“Sans Pareil”
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Creating a win-win situation for all parties is likely to lead to success
This is not new – Solid State Interlocking
1980’s

Collaboration created a
Win-Win Situation
But it doesn’t always work!

"Probably the finest Advanced Passenger Train of All Time"

Figure 11.5: Comparative innovation index

McNulty Report 2011
Great idea but why wasn’t it implemented?

Resources

Research Faculty and Students

Level of Development

Entrepreneurs and Business Community

“Valley of Death”

Commercialization Resources
So what do you see as the barriers to delivering and innovative solution?

How can we remove them?
Workshop

- Split into 4 teams
- 25 min Brainstorm
- 15 min Action Plan
- 4 x 5 Min feedback
- Winner!
Workshop part 1 – 25 Min Brainstorm

- Decide a team name
- What are the barriers to innovation in the UK rail industry?
- Prioritise the Barriers
- Identify the gatekeepers
- Decide what needs to change to remove these barriers?
Fishbone Diagram

We fail to implement innovative ideas
Workshop part 2 – 15 min Action Plan

- The top 3 to 6 things we need to change to enable innovation in the UK rail industry?

<table>
<thead>
<tr>
<th>What</th>
<th>Why</th>
<th>How</th>
<th>Who</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>needs to change?</td>
<td>will it be beneficial?</td>
<td>will you make it happen?</td>
<td>needs to lead?</td>
<td>can it be implemented?</td>
</tr>
</tbody>
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Workshop part 3 – 4 x 5 min pitch

Each team will have 5 minutes to ‘pitch’ their plan to ask a sceptical board for the resources to implement the teams plan
Thank You