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GENERAL TRENDS AND EXAMPLES OF AI APPLICATIONS IN NUCLEAR SECURITY

“the view from here”

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THE COMING WAVE



Technology, Power, and
the Twenty-first Century's
Greatest Dilemma

“The most important transformation in our lifetimes..”

“...unstoppable wave...”

Cannot be controlled or (easily) regulated,
characterised by:

- *hyper-evolution*
- *autonomy*
- *generic technology*
- *distributed research*

What could we do with AI?

“what is the potential?”

AI has the greatest potential to improve nuclear security in the following area:

You can see how people vote. [Learn more](#)

Cyber Security	27%
Physical Security Systems	23%
Insider Mitigation	19%
Risk Management & Assurance	31%

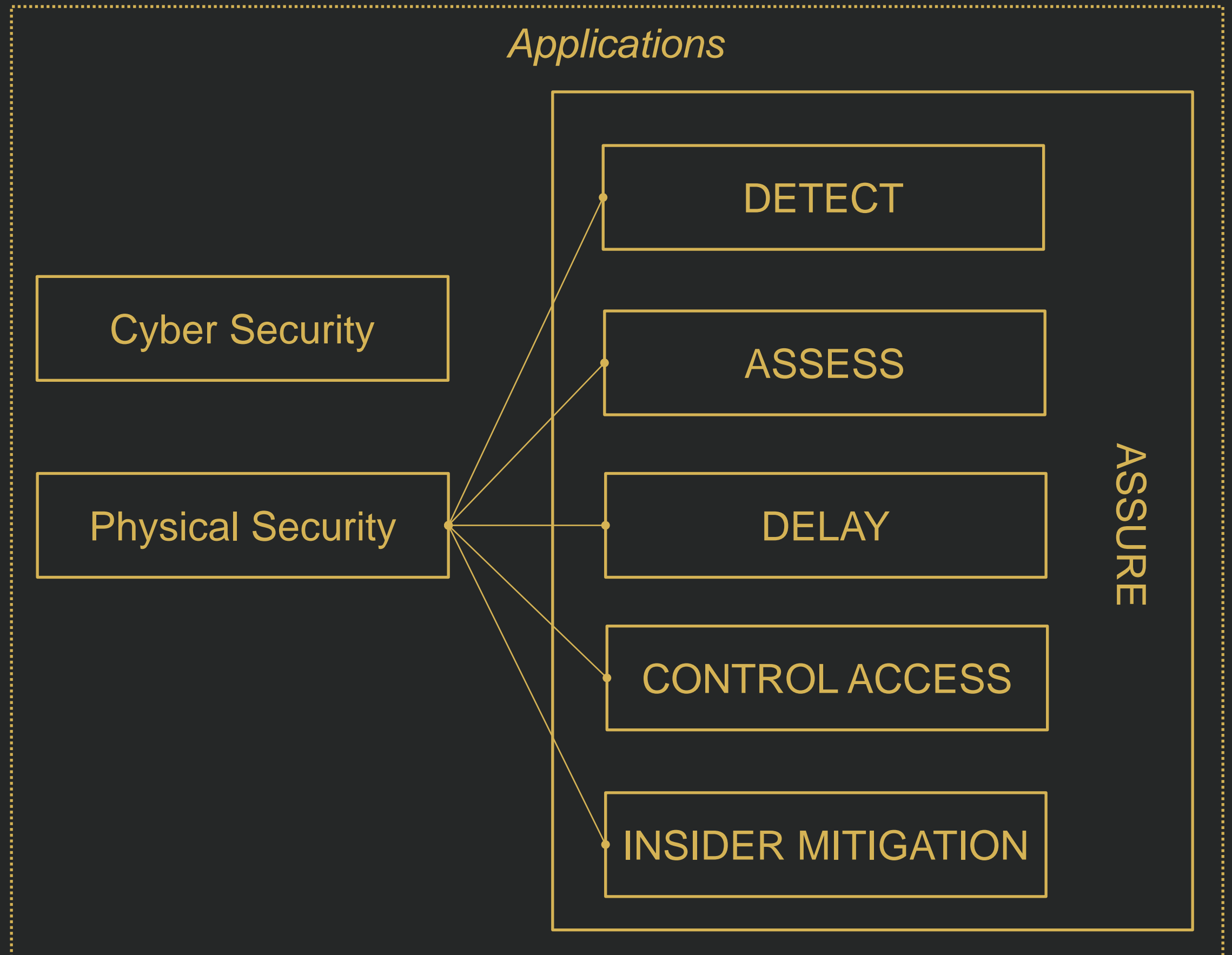
We should embrace AI technology in nuclear security. AI has the potential to radically improve nuclear security operations.

You can see how people vote. [Learn more](#)

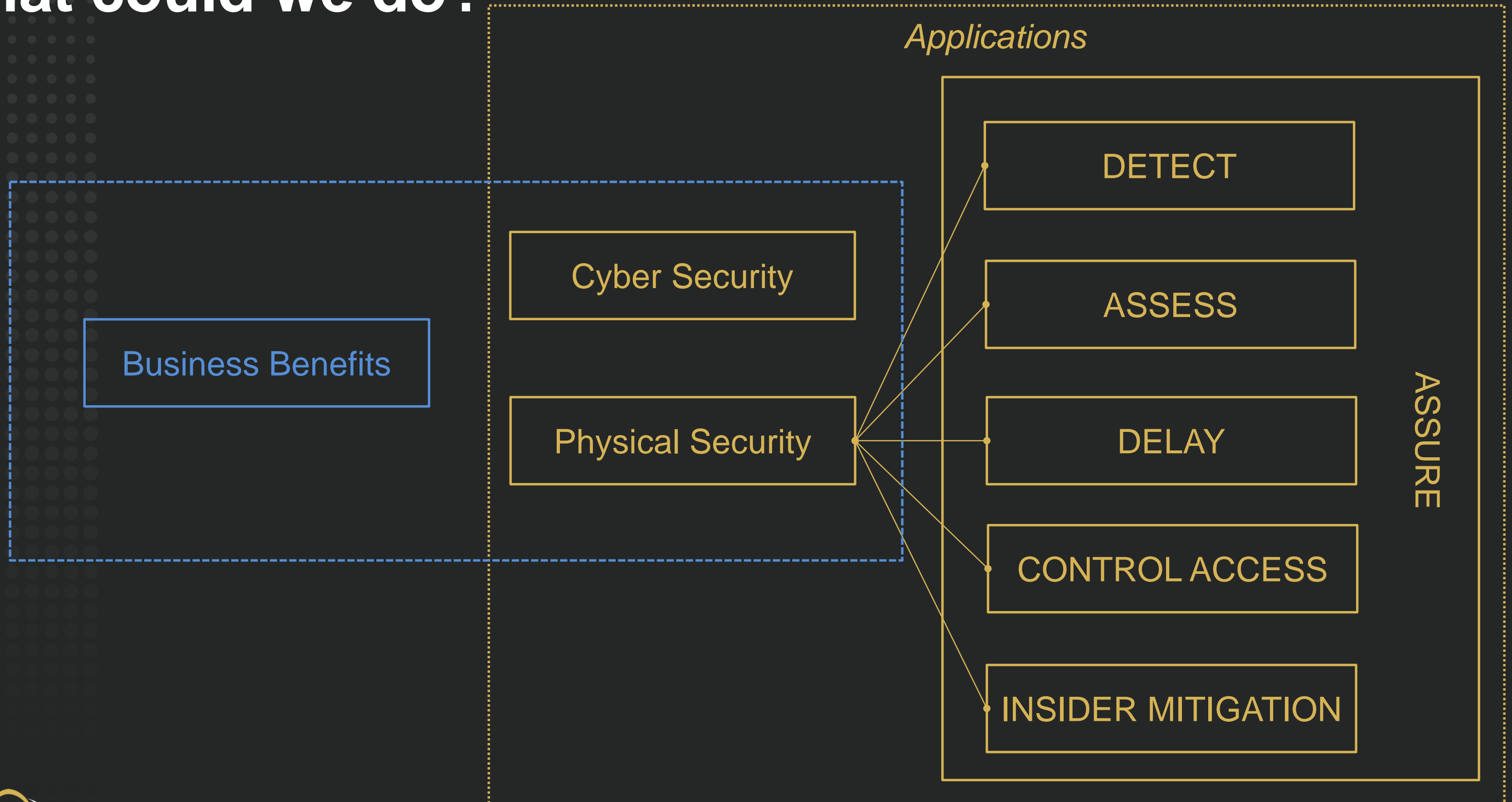
Yes - do more faster	37%
Yes - but move slower	42%
Probably not - too much risk	19%
Never - risks too high	2%



What could we do?



What could we do?



What could we do?

“where are the benefits?”



Increase efficiency of the nuclear security system

Improve accuracy & speed of the security system components

Facilitate and drive innovation

Improve understanding of risk & improve assurance



Apple News+

Newsweek

**Donald Trump raises red flag
on AI: "So scary"**

Why aren't we doing more?

“risks, obstacles & challenges”

- ‘Anthromorphisation’ of AI’ ... potential insider?
- Trust - ‘black box’, unions/workforce, budget holders & risk owners
- Aggregation – let the fox run around the hen coop?
- Classification – just ‘no’! How do you vet an AI model?
- Accreditation and regulation

AI as a double-edged weapon

“adversarial advantages and opportunities”

- “Everything you can do ... I can do, better”
- Cyber/Blended Attacks
- Social Engineering
- Attacking Reputation
- Planning & open source reconnaissance
- etc etc etc
- Frictionless adaptation and exploitation



“So what?”

- **Transformative challenge** – *not just the industry but the threats and even society in which we operate.*
- *Heavily regulated, conservative nature of the nuclear industry gives the **adversary advantage** and head start.*
- *Operational **implementation**; demonstration of clear business benefits and building trust will be key.*



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“Creativity is thinking up new things.
Innovation is doing new things.”

Theodore Levitt (1925 – 2006), Economist



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