

WILL LASER SCANNING SAVE THE WORLD?

THOMAS WERNER



LASER SCANNING

what do we think of?

what could we be?



Source – Discovery Channel



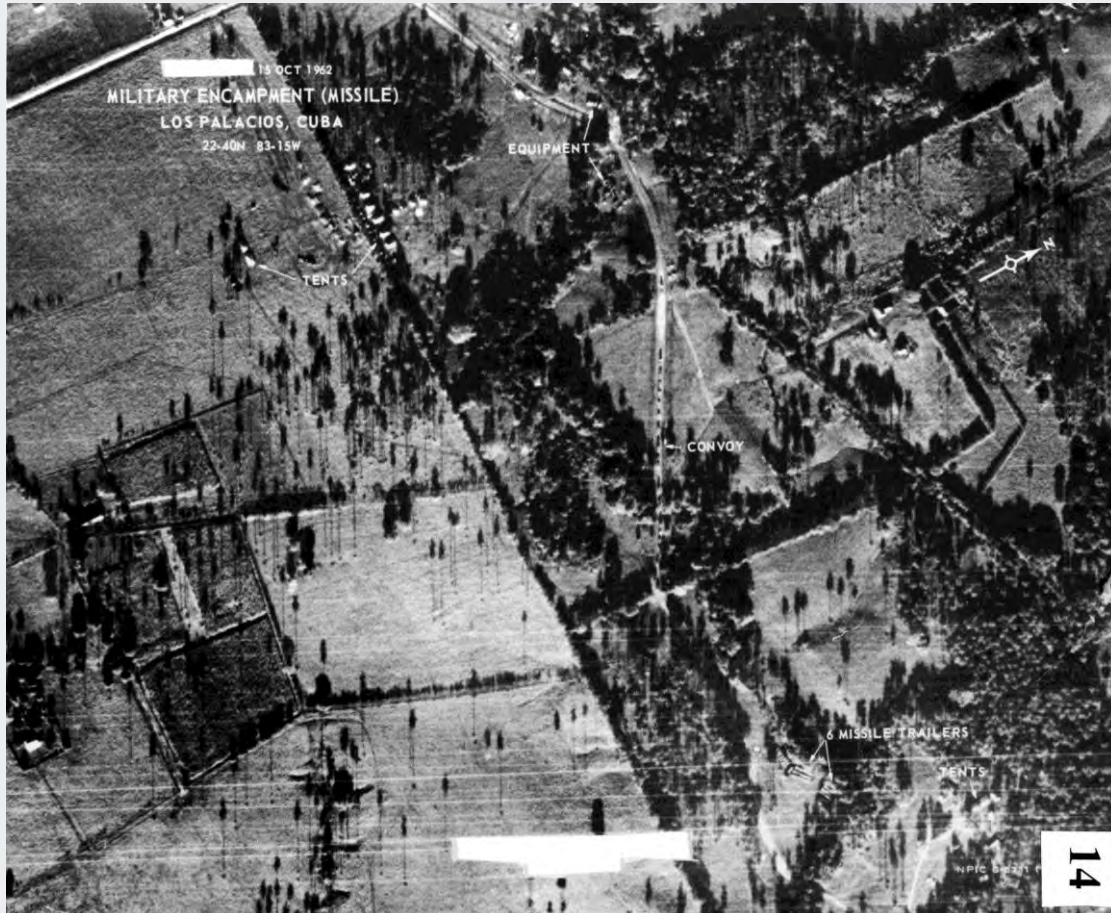
Acquire • Innovate • Realise

WHY “SAVE THE WORLD”

The potential for Laser Scanning and its application benefits us more than can be imagined

WHY “SAVE THE WORLD”?

Source – US Govt Archives





Source – US Govt Archives

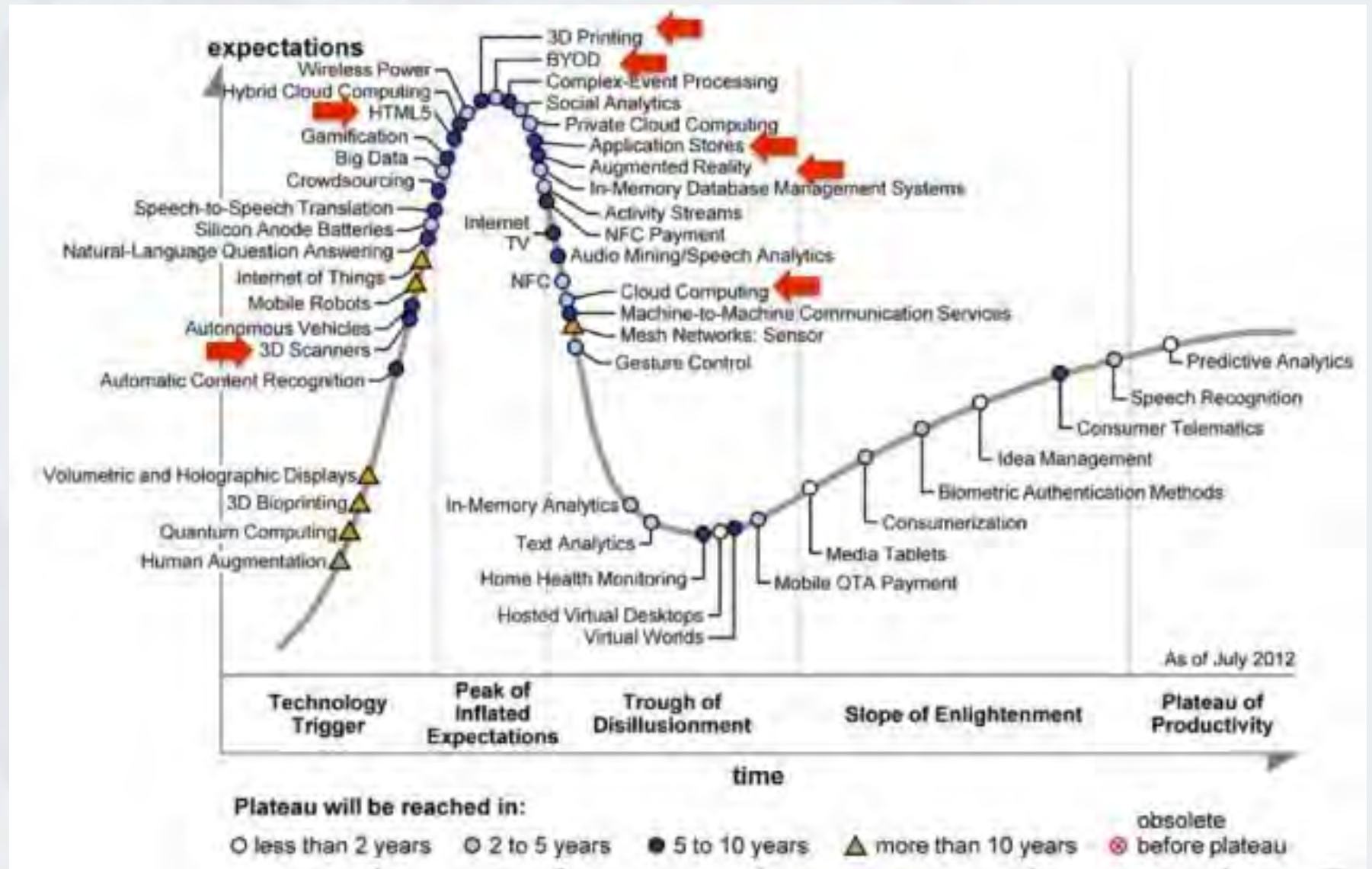


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BACKGROUND

where have we come from, and where are we going?

BACKGROUND



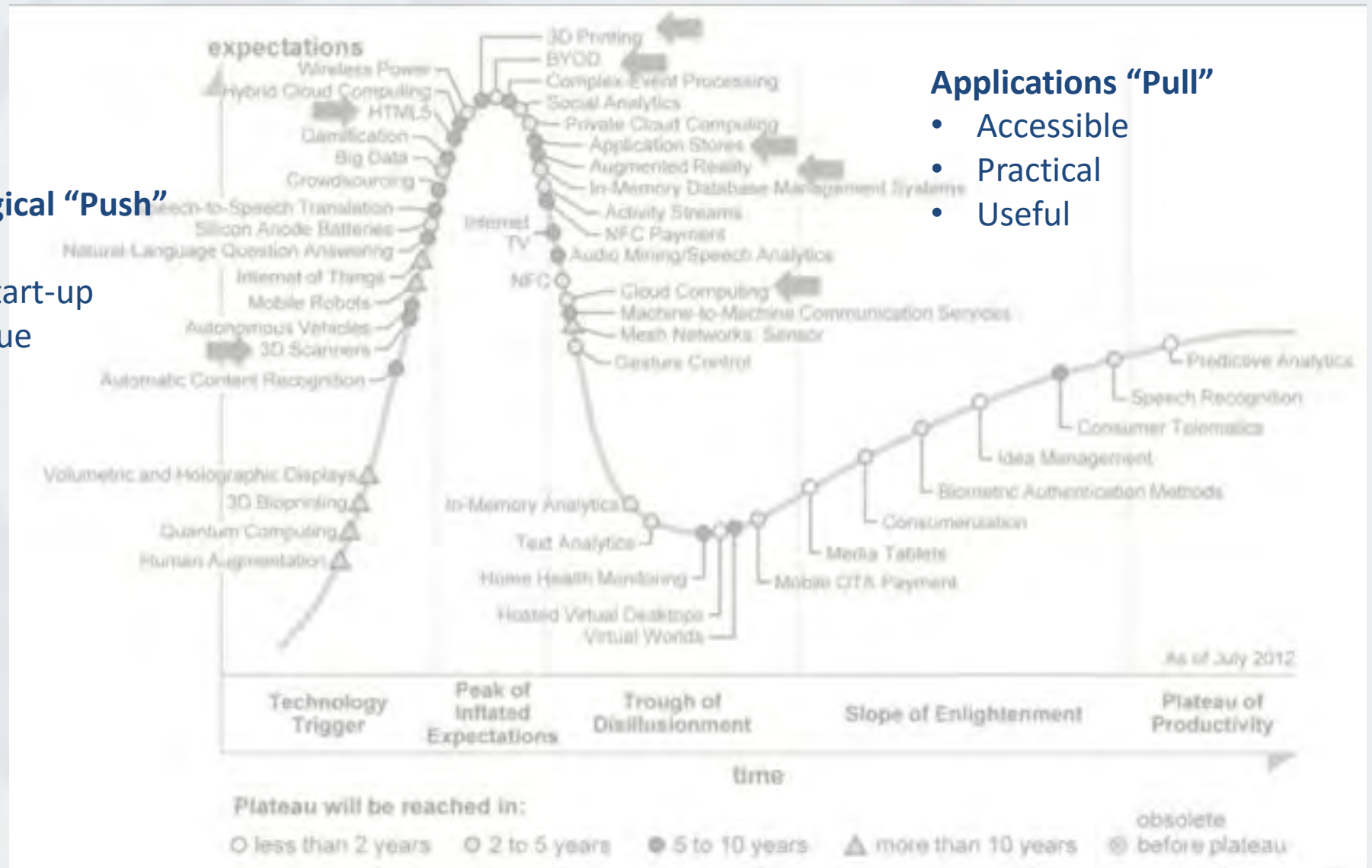
INTERPRETATION

Technological "Push"

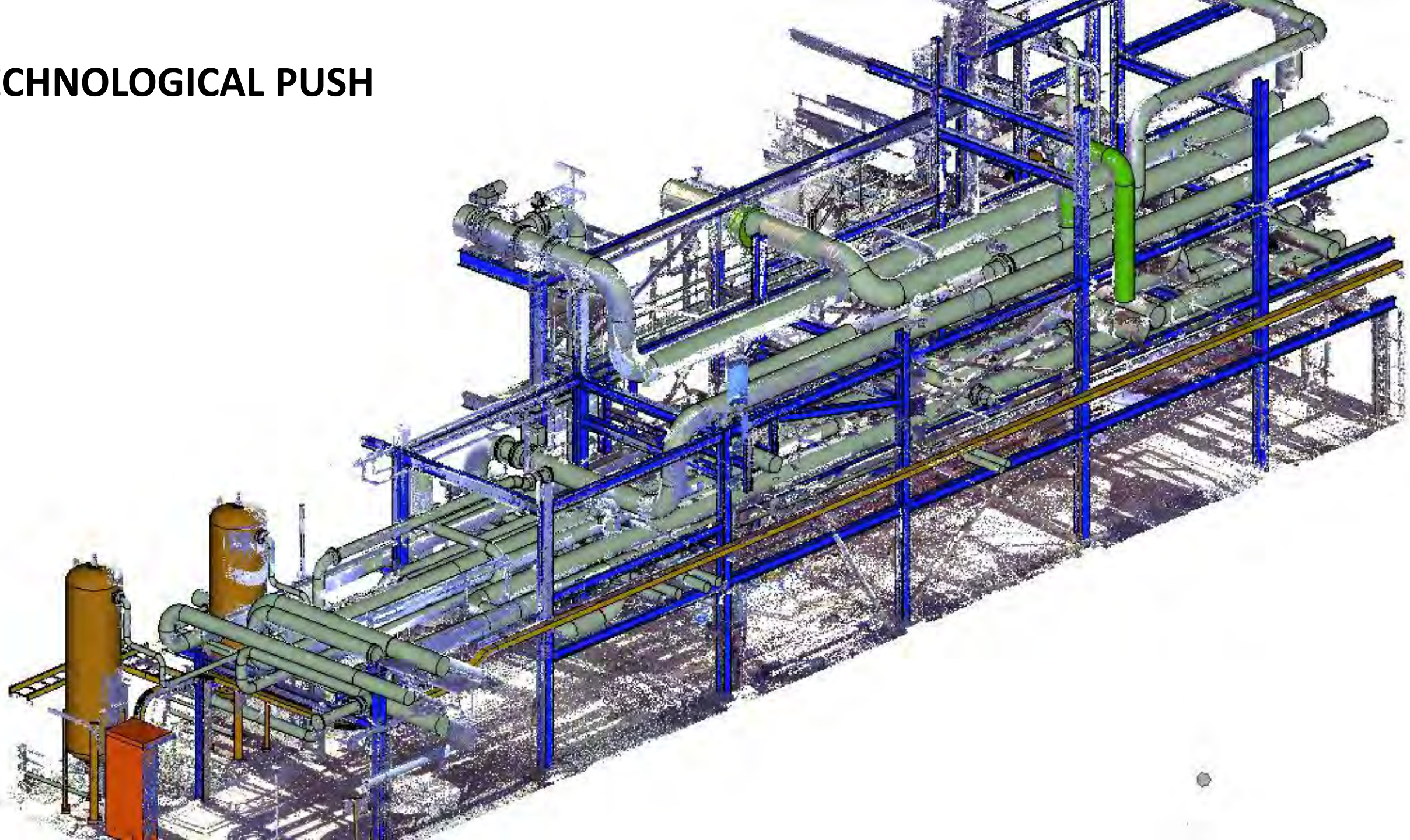
- O&G
- High Start-up
- Boutique

Applications "Pull"

- Accessible
- Practical
- Useful



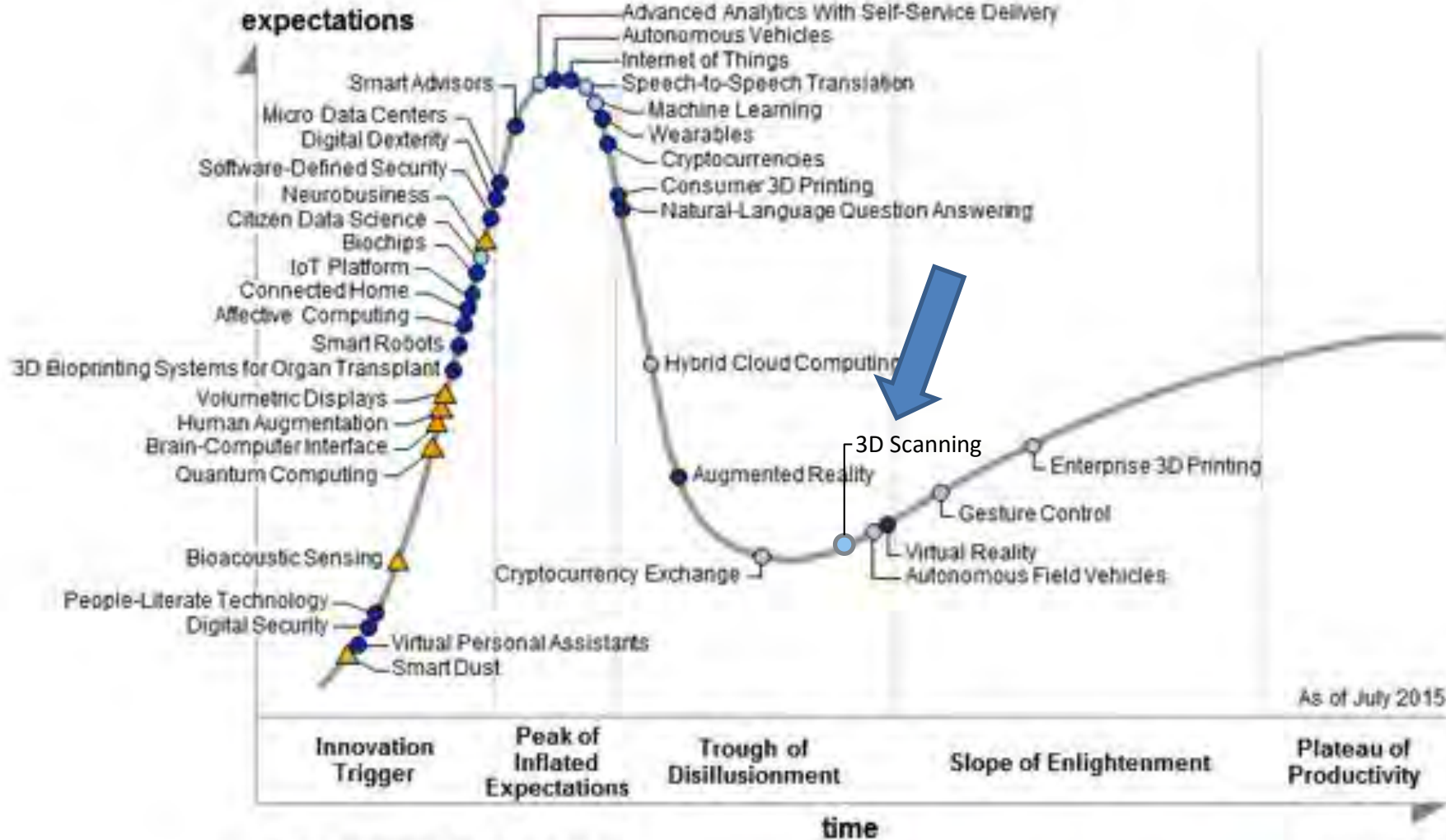
TECHNOLOGICAL PUSH



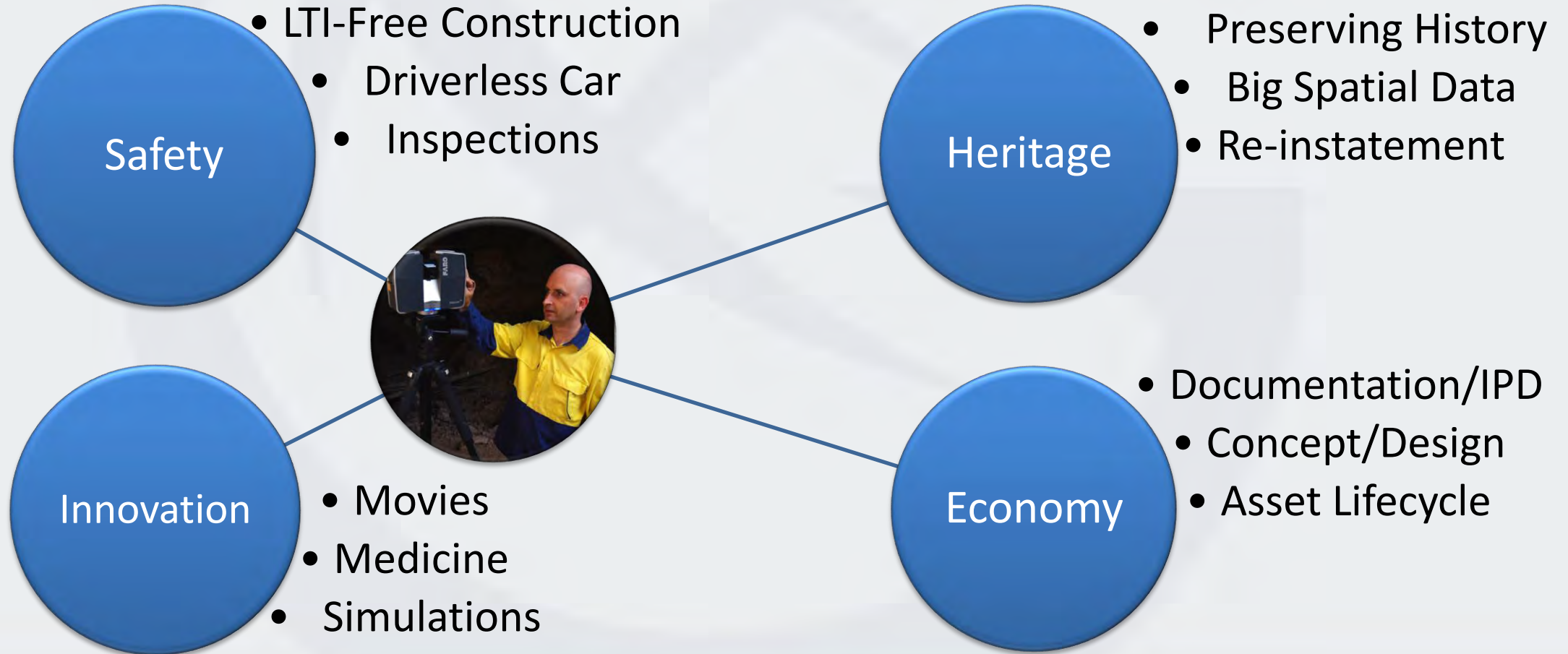


APPLICATIONS PULL

WHERE SHOULD WE BE LOOKING?



HOW CAN SCANNING SAVE THE WORLD?





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ECONOMY

Laser Scanning solves problems, saves time and help decisions – all of which saves money

ECONOMY

- Traditional technological push
- \$16b, mature industry
- Subject to commodity prices
- Leverage and opportunity exhausted, but:
 1. Safer for laser scanning
 2. Production time improved
 3. Rejuvenation and maintenance

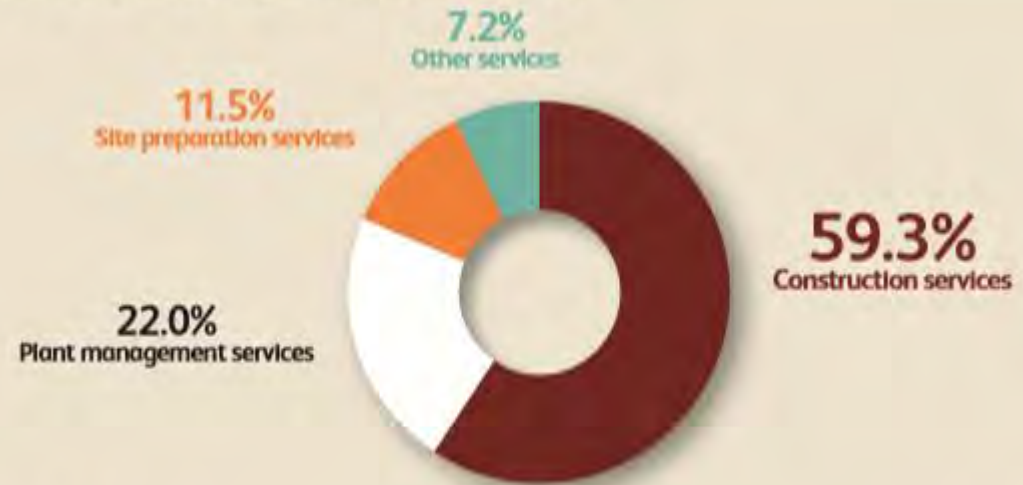
Oil and Gas Field Services in Australia

November 2015

Anthony Kelly

Running out of gas: The industry is set to contract as work on LNG projects is wound up

Products and services segmentation (2015-16)



Total \$16.3bn

ECONOMY

- mixed use – push and pull
- \$193b, declining industry
- Subject to commodity prices
- Leverage and opportunity available:
 1. Pre-Shutdown capture
 2. Volume Analysis
 3. Rejuvenation and maintenance

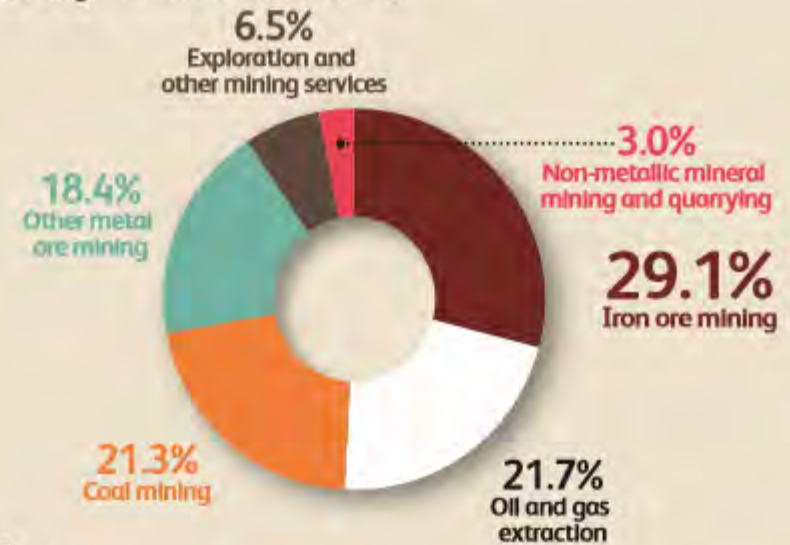
Mining in Australia

February 2016

Alen Allday

Miner decline: Falling profit has forced some smaller players to exit the division

Products and services segmentation (2015-16)



Total \$193.3bn

SOURCE: WWW.IBISWORLD.COM.AU

ECONOMY

- Construction services – Applications Pull
- \$350b industry
- Entire project relies on geospatial information and services
- Outcomes of project rely on documentation, visualisation and communication of information provided by us
- Leverage and opportunity available:
 1. Design
 2. As-Built
 3. Rejuvenation and decision-making

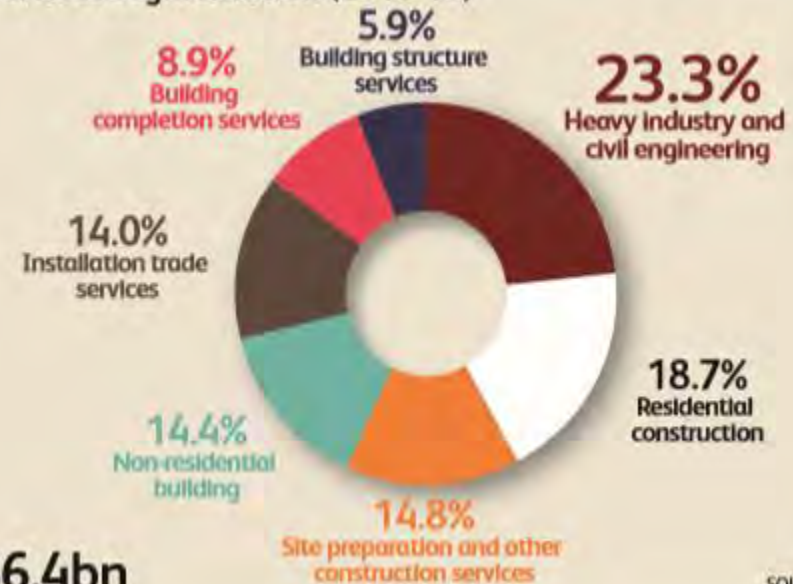
Construction in Australia

February 2016

Anthony Kelly

Strong foundation: Investment in infrastructure projects bolsters industry revenue growth

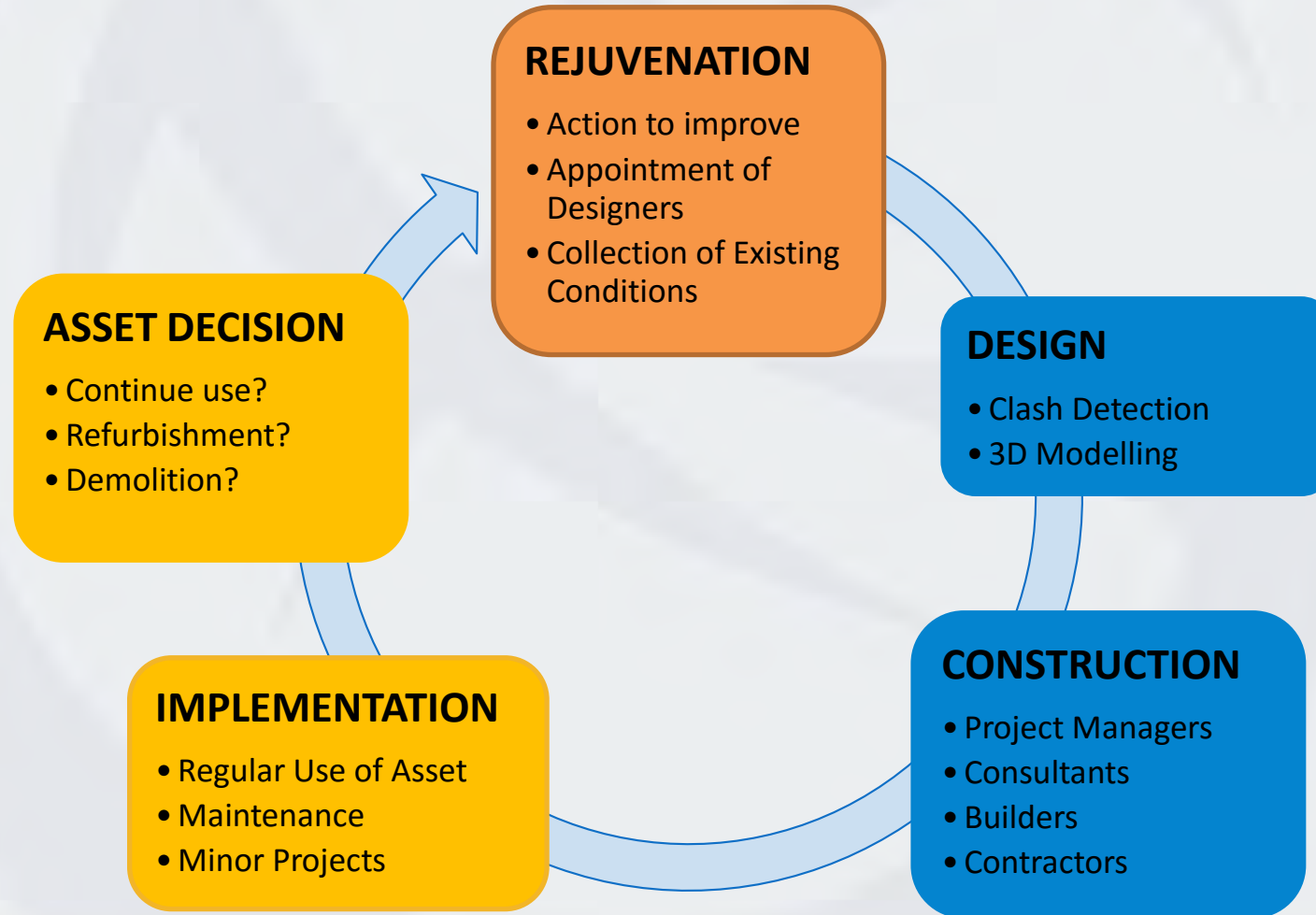
Products and services segmentation (2015-16)



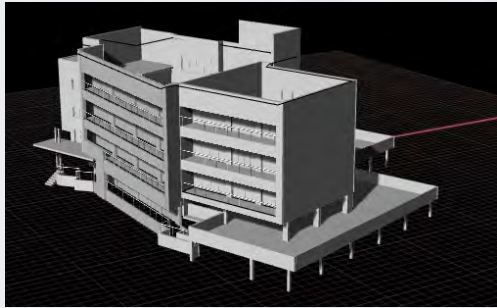
Total \$356.4bn

SOURCE: WWW.IBISWORLD.COM.AU

ECONOMY



ECONOMY



CONSULTANCY

REJUVENATION

- Action to improve
- Appointment of Designers
- Collection of Existing Conditions

SCAN TO BIM



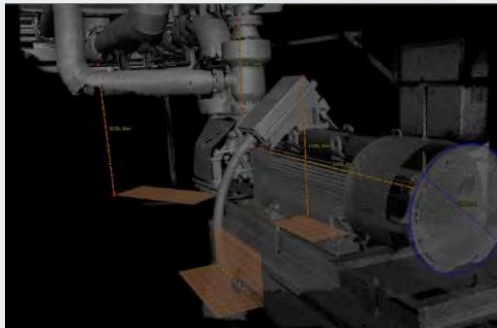
ASSET DECISION

- Continue use?
- Refurbishment?
- Demolition?

DESIGN

- Clash Detection
- 3D Modelling

BIM TO BUILD



AS-BUILT

IMPLEMENTATION

- Regular Use
- Maintenance
- Minor Projects

CONSTRUCTION

- Project Managers
- Consultants
- Builders
- Contractors

ECONOMY



ECONOMY + INNOVATION

- medical imaging services – Applications Pull
- \$3.5b industry
- Entire system relies on geospatial methods for verification
- Outcomes of project directly help people in many ways
- Leverage and opportunity available:
 1. Imaging
 2. Documenting
 3. Analysis and Decision Making

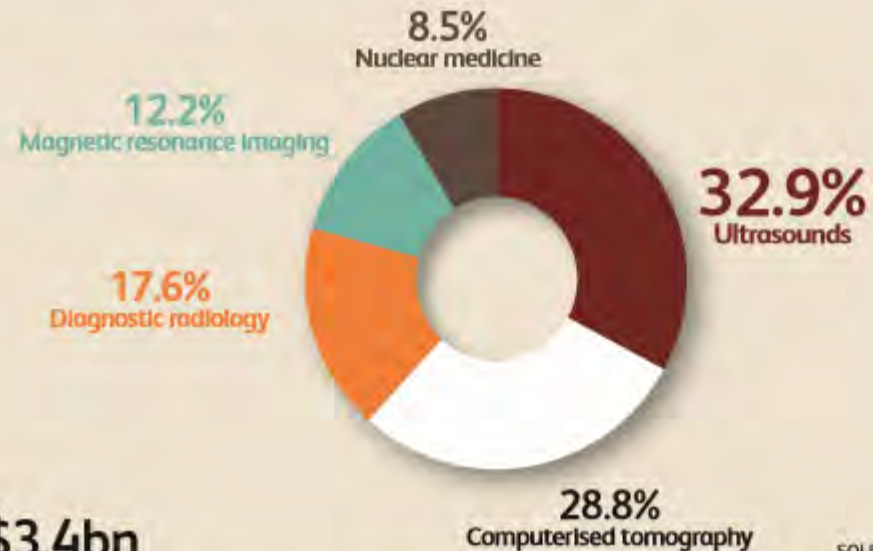
Diagnostic Imaging Services in Australia

March 2016

Jem Anning

Positive diagnosis: Price competition and government policy boost industry demand

Products and services segmentation (2015-16)



SOURCE: WWW.IBISWORLD.COM.AU

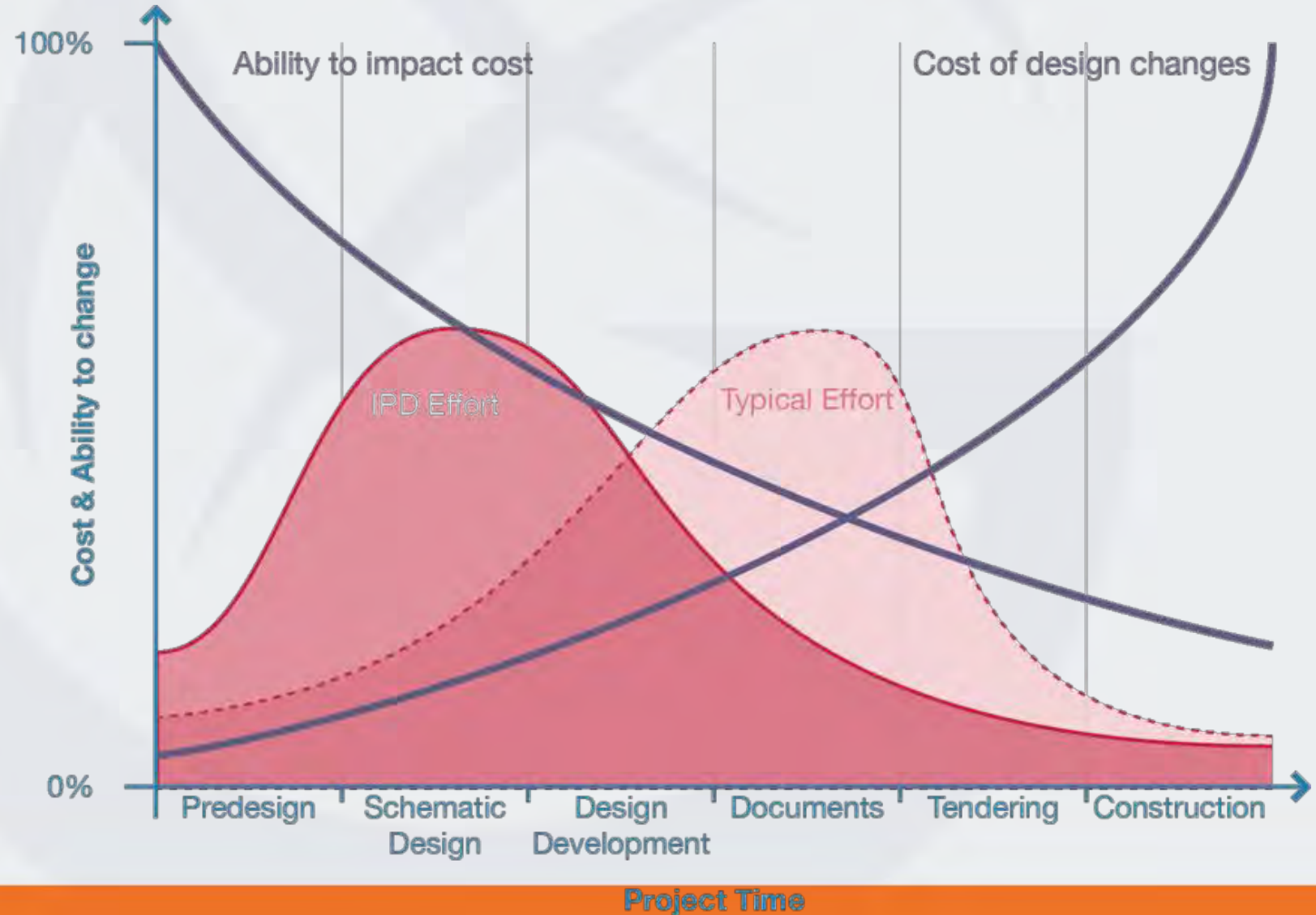


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INNOVATION

the new, different and powerful ways to broadcast and channel benefits of laser scanning

ECONOMY + INNOVATION



The Macleamy Curve

Project Time

INNOVATION



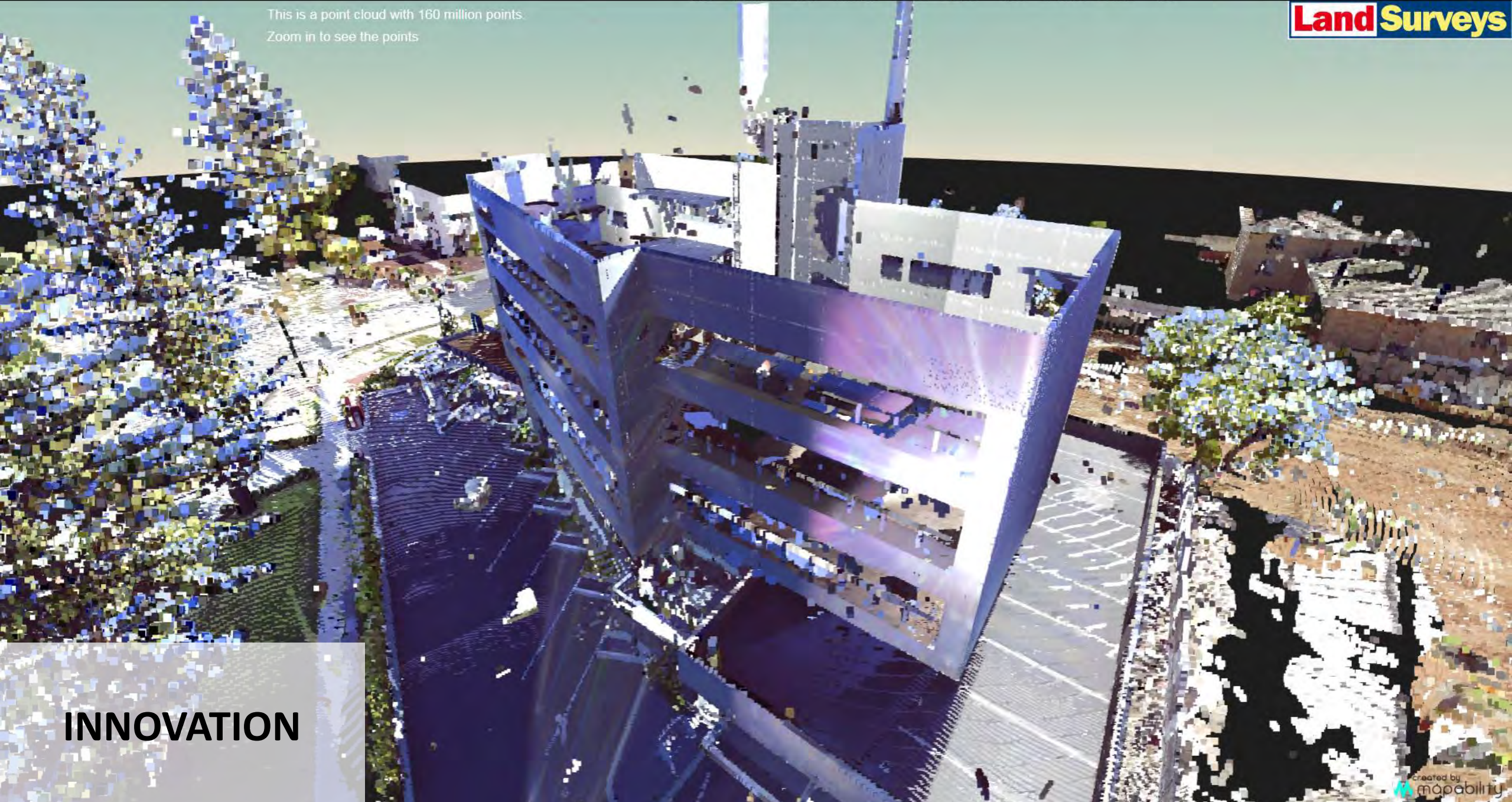
Source – virginmedia.com

Source – CSIRO



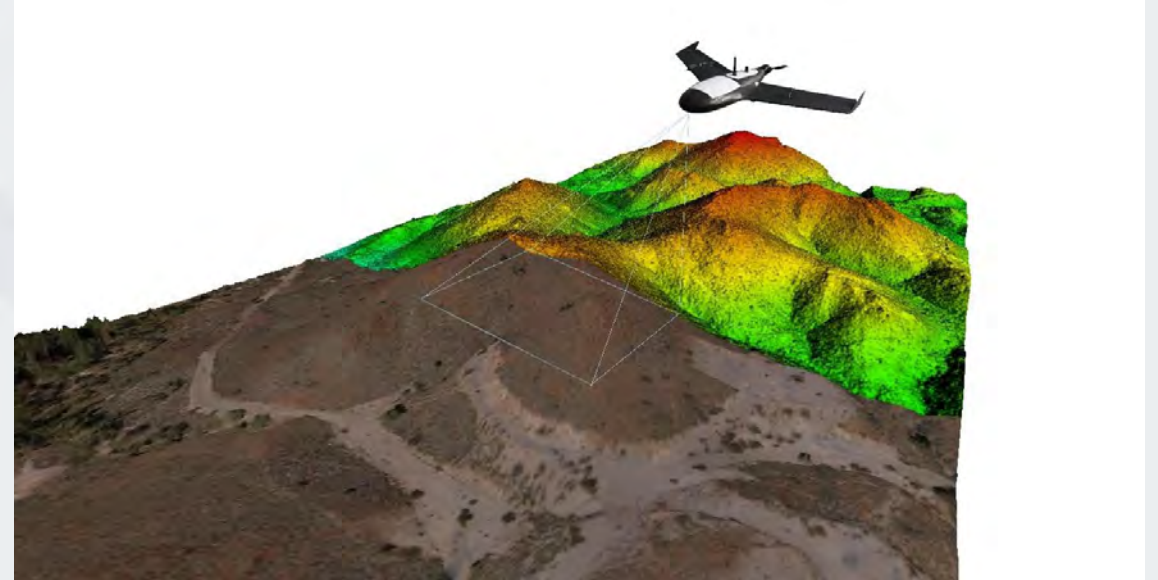
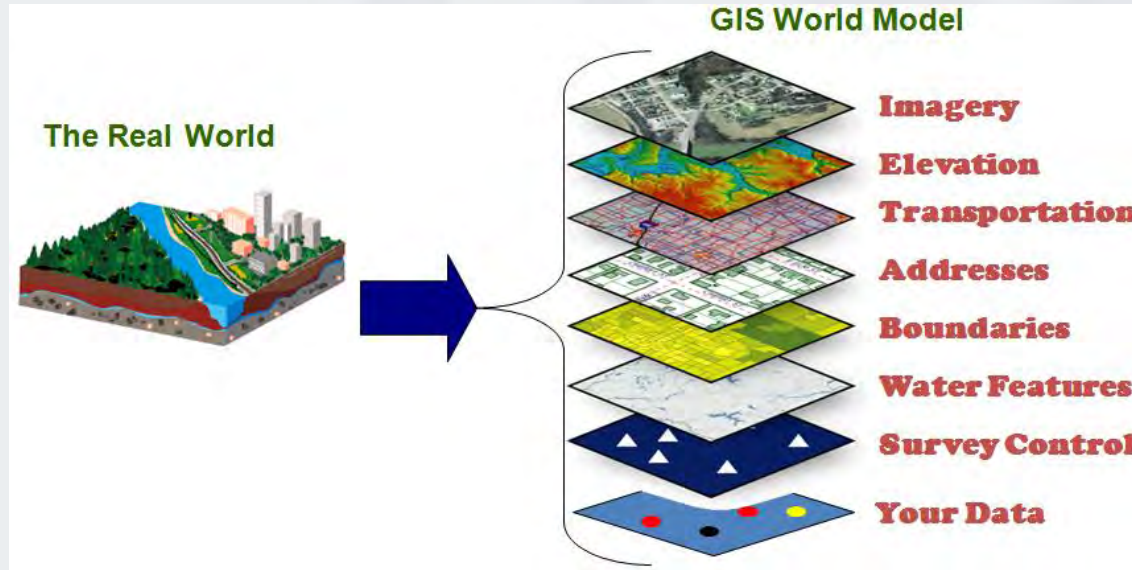
INNOVATION

This is a point cloud with 160 million points.
Zoom in to see the points



INNOVATION

INNOVATION

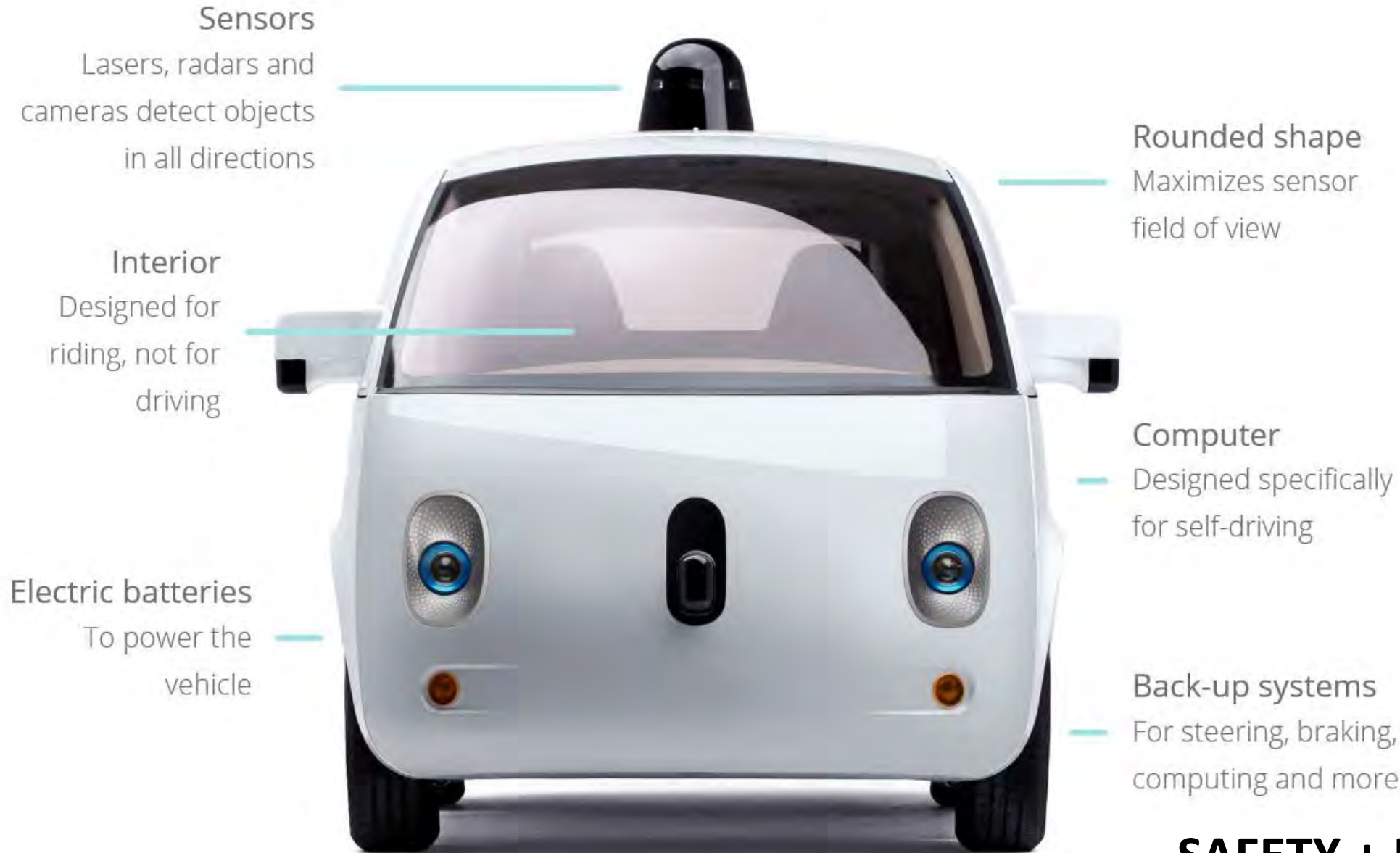


Source – ESRI

SAFETY

using laser scanning to the utmost will make sure people live, work and travel safely

Source – Google



Sensors

Lasers, radars and cameras detect objects in all directions

Interior

Designed for riding, not for driving

Electric batteries

To power the vehicle

Rounded shape

Maximizes sensor field of view

Computer

Designed specifically for self-driving

Back-up systems

For steering, braking, computing and more

SAFETY + INNOVATION

SAFETY + INNOVATION



Why design a self-driving vehicle from the ground up?



Google Self-Driving Car Project

Subscribe 47,072

91,711

Source – youtube.com

Up next

Autoplay



A Ride in the Google Self Driving Car
Google Self-Driving Car Project
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How Does Google's Driverless Car Work?
Protin Pictures
103,287 views



Elon Musk says autonomous driving is easy to achieve! (2015.3.17)
Every Elon Musk Video
31,348 views



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I'm from FUTURE
10,805,726 views



Self-Driving Vehicles: Startups (Already) on the Road
vlabvideos
11,472 views



About the project
Google Self-Driving Car Project

SAFETY





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HERITAGE

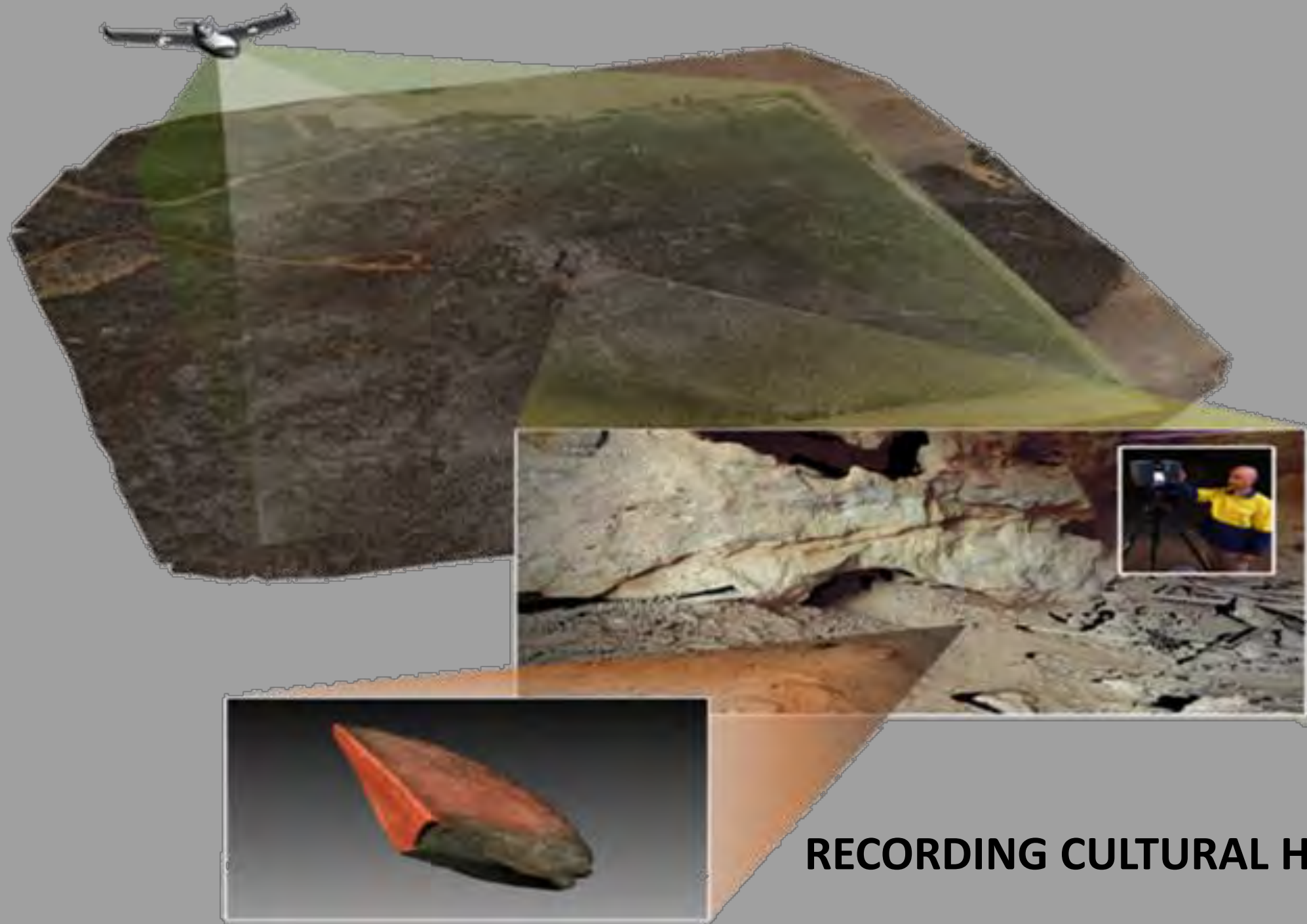
preserving, transforming & documenting history for the enjoyment of future generations



PRESERVING OUR HERITAGE



TRANSFORMING OUR HERITAGE



RECORDING CULTURAL HERITAGE

CyArk to Digitally Preserve At-Risk Heritage Sites in Syria, the Middle East



BERLIN, Oct. 20, 2015 /PRNewswire/ -- CyArk, a non-profit organization that has digitally preserved scores of the world's most famous cultural sites, today announced its most audacious effort yet – Project Anqa, a joint initiative with the International Council of Monuments and Sites (ICOMOS) to digitally document dozens of at-risk sites in Syria, Iraq and the Middle East.

Source – CyARK



"The beloved heritage in the ancient 'Cradle of Civilization' is under threat, evidenced by the destruction of landmarks at Palmyra and Mosul," said Ben Kacyra, president and co-founder of CyArk. "The digital technology exists to preserve measurable 3D models of these historical sites before they are damaged or destroyed. It's only fitting we announce Project Anqa here in Berlin, which has such a long and rich tradition of archaeology and heritage preservation."

WHAT'S THE POINT?

Source – skyvector.co

- Information makes the world a better place
- Confidence in decision making is improved with information
- We are experts in big data – let's control the conversation
- Let's use the right application industries to support and provide us a basis of revenue
- Let's help ensure Laser Scanning saves the world

WILL LASER SCANNING SAVE THE WORLD?

Acquire • Innovate • Realise



- if we champion the discussion
- if we provide relevance to the conversation
- if we promote and support others

yes, it can

Thank you

Thomas Werner

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L: <http://au.linkedin.com/in/thomaswerner>