Enterprise Architecture | Strategic Architecture



loT @ Edge

seabed to space

robots to rockets

David W. Nelson (ATF)

Chief Strategist IIoT (Industrial Internet of Things)

Co-Chair: Innovation Task Group, Industrial Internet Consortium (IIC)

Session

The agenda includes technology demonstrations, dynamic panel discussions and presentation from IIoT experts designing and driving innovations within their enterprises and among customers.

Topics include autonomous and connected aeronautics, automotive and undersea vehicles, system trustworthiness, edge computing, connectivity, machine learning, secure Over-the-Air (OTA) updates, compute acceleration, automotive OS, new business models and the future direction of this technology.

By Riccardo Cupi

In "edge computing," therefore, applications, data, and services are <u>pushed to the logical extremes of</u> <u>a network</u> — away from the center — to enable analytics knowledge generation and immediate decision-making at the source of the data.

- Nicola Villa, Managing Director, Global Analytics Practice, Cisco Consulting Services



"We are investing in autonomous systems capabilities, gaining valuable experience with unmanned air vehicles, spacecraft, and maritime surface and undersea systems."

-Mike Sinnett, Vice President Product Strategy and Future Airplane Development

AIRLINES

Industrial Internet Consortium (IIC)

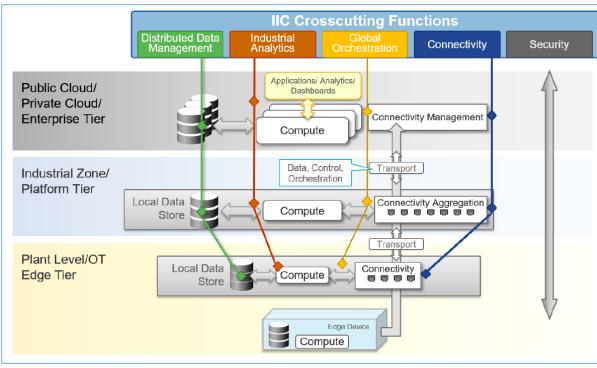


Figure 1: IIC Crosscutting Functions Across Edge Computing Architectures

Edge: "cloud computing systems that perform data processing at the edge of the network, near the source of the data".

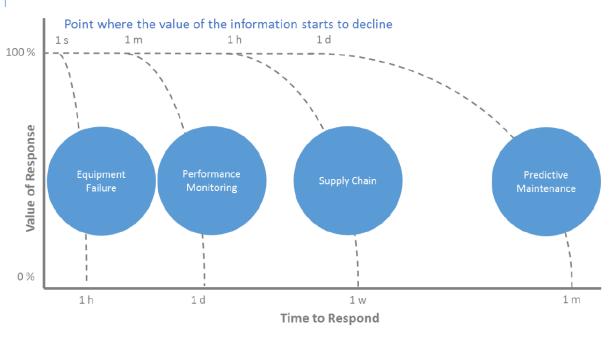


Figure 3: Time-Value curves for Edge information

Advanced Robotics

Mechanic and Machine: Boeing's Advanced Manufacturing Improves 777 Assembly

Advanced manufacturing process has helped build more than 40 777s to date February 24, 2017 in Our Commitment



Source: https://depts.washington.edu/barc/news/visit-boeing-ceo%20 Source: http://www.boeing.com/company/about-bca/washington/faub-777-production-03-24-17.page Copyright © 2019 Boeing. All rights reserved.

BARC@UW

BOEING ADVANCED RESEARCH CENTER

♠ ➤ Visit from Boeing CEO

Visit from Boeing CEO

Friday, May 11, 2018 UW News



Dennis A. Muilenburg (president, chair, and chief executive officer of The Boeing Company) visited BARC and UW. Photo with students, faculty, staff at UW and Boeing affiliates

Boeing Additive Manufacturing (BAM)



A bed of additive-manufactured titanium components for the Boeing 787 Dreamliner. Photo via Norsk Titanium.

"3D printing has the ability to transform manufacturing in one of the most significant ways in our history. I think this is a real gamechanger." - **Boeing VP & GM Kim Smith**

Boeing engineers inspire future STEM leaders during Engineers Week

"I think Boeing really cares about the future" February 21, 2019 in Our Community



Source: <u>https://www.manufacturingleadershipcouncil.com/2018/05/03/boeings-additive-ambition/</u> Source: https://3dprintingindustry.com/news/3d-printing-news-sliced-boeing-renishaw-norsk-titanium-digital-metal-127889/ Source: https://www.boeing.com/company/about-bca/washington/stem-engineers-week-02-21-19.page

Enterprise Architecture | Strategic Architecture



"By taking a holistic approach that combines Boeing's strength in technological innovation with new business models and non-traditional partnerships, we are laying the foundation for the future commercial **mobility ecosystem**," said Steve Nordlund, who will lead Boeing NeXt in addition to serving as vice president of HorizonX.



Source: https://www.geekwire.com/2018/whats-next-boeing-will-work-ai-blockchain-drone-traffic-system/ Source: https://www.boeing.com/features/2019/02/aerion-partnership-02-04-19.page Source: http://www.boeing.com/company/key-orgs/horizon-x/#/news



Boeing HorizonX Ventures Invests in On-Demand Urban Aerial Delivery Startup Matternet



Boeing HorizonX Ventures Invests in Unmanned Aircraft Systems Software Startup Kittyhawk



Boeing HorizonX Invests in Unmanned Systems Technology Leader Near Earth Autonomy

Boeing HorizonX Invests in Zunum Aero





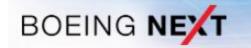
Boeing Unveils New Unmanned Cargo Air Vehicle Prototype



Autonomous Passenger Air Vehicle (PAV)



Source: https://www.boeing.com/reatures/2019/01/pav-inst-night-01-19.page Source: https://www.eetimes.com/document.asp?doc_id=1334403 Source: https://www.aurora.aero/pav-evtol-passenger-air-vehicle/



CREATING A SECURE AIRSPACE

autonomous and piloted air vehicles to safely coexist



MOVING GOODS AND CARGO

transforming the future of autonomous mobility

GIVING PEOPLE MORE TIME



Source: http://www.boeing.com/NeXt/index.html Copyright © 2019 Boeing. All rights reserved.

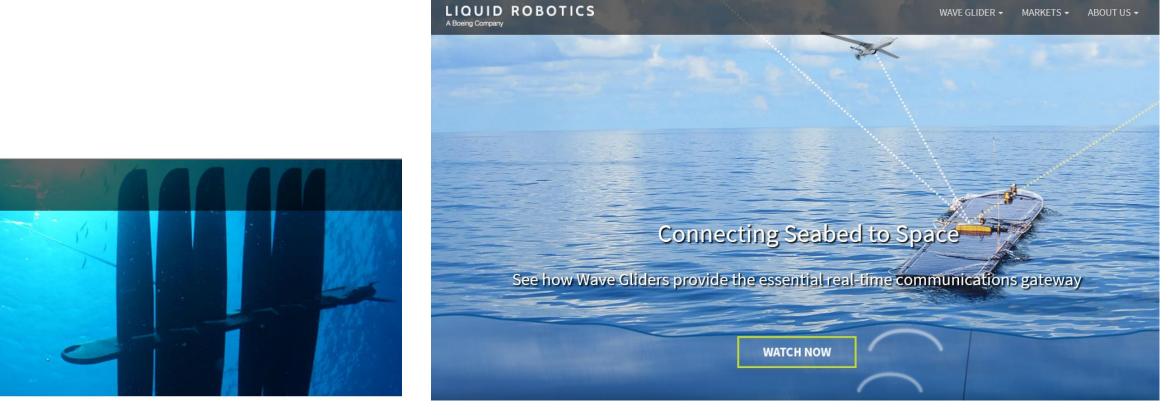
SparkCognition & Matternet



Boeing — the world's largest aerospace company – is teaming up with Al-firm SparkCognition to launch **SkyGrid** – a new startup focusing on urban aerial mobility.

Source: https://dronelife.com/2018/11/26/boeing-teams-up-with-startup-to-spawn-drone-logistics-system/ Source: https://boeing.mediaroom.com/2018-06-26-Boeing-HorizonX-Ventures-Invests-in-On-Demand-Urban-Aerial-Delivery-Startup-Matternet Source: https://www.forbes.com/sites/marisagarcia/2018/07/17/boeing-partners-with-sparkcognition-to-develop-ai-solutions-for-future-of-air-transport/#16bed6655df4 Copyright © 2019 Boeing. All rights reserved.

Liquid Robotics



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Wave Gliders provide a platform for gathering data over longer durations for a fraction of the cost of ships. Using fleets of Wave Gliders to better understand the health of our fisheries, could have a massive economic impact."

BOEING AEROSPACE & AUTONOMY CENTER

Shaping the future of mobility

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UPDATES IN THE NEWS



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The sky is no longer the limit.





From Star Wars to Flying Motorcycles: GoFly Interviews Team Aeroxo's Vladimir Spinko

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Opportunities

- Massive Data
- Connectivity
- Architecture
- Global Reach
- Emerging Technology

