

Investing in Big Data & Technology

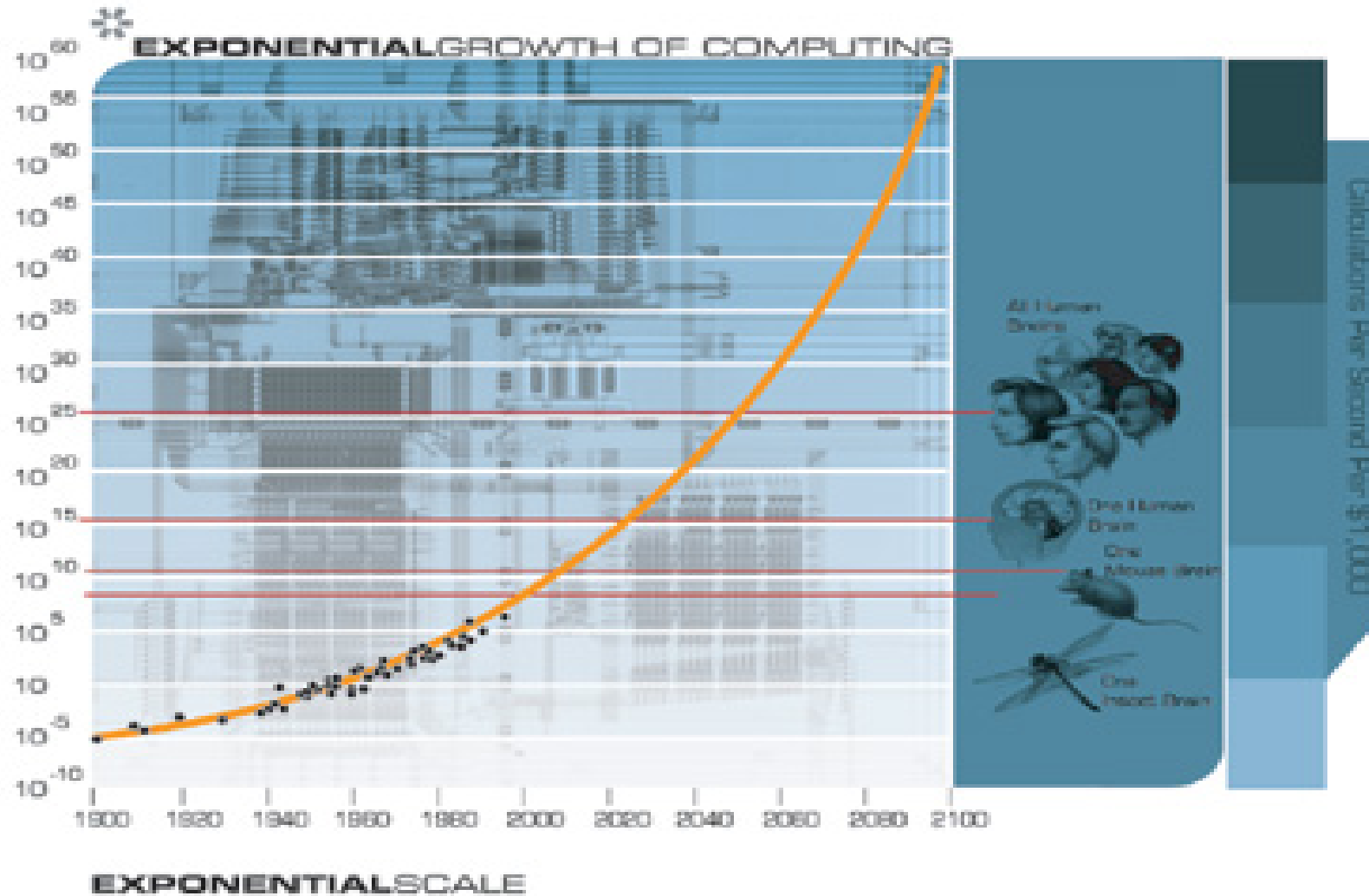
Optimizing Costs & Boosting Efficiency

6th Annual Capital Link Maritime CSR Forum, London 2nd November 2016

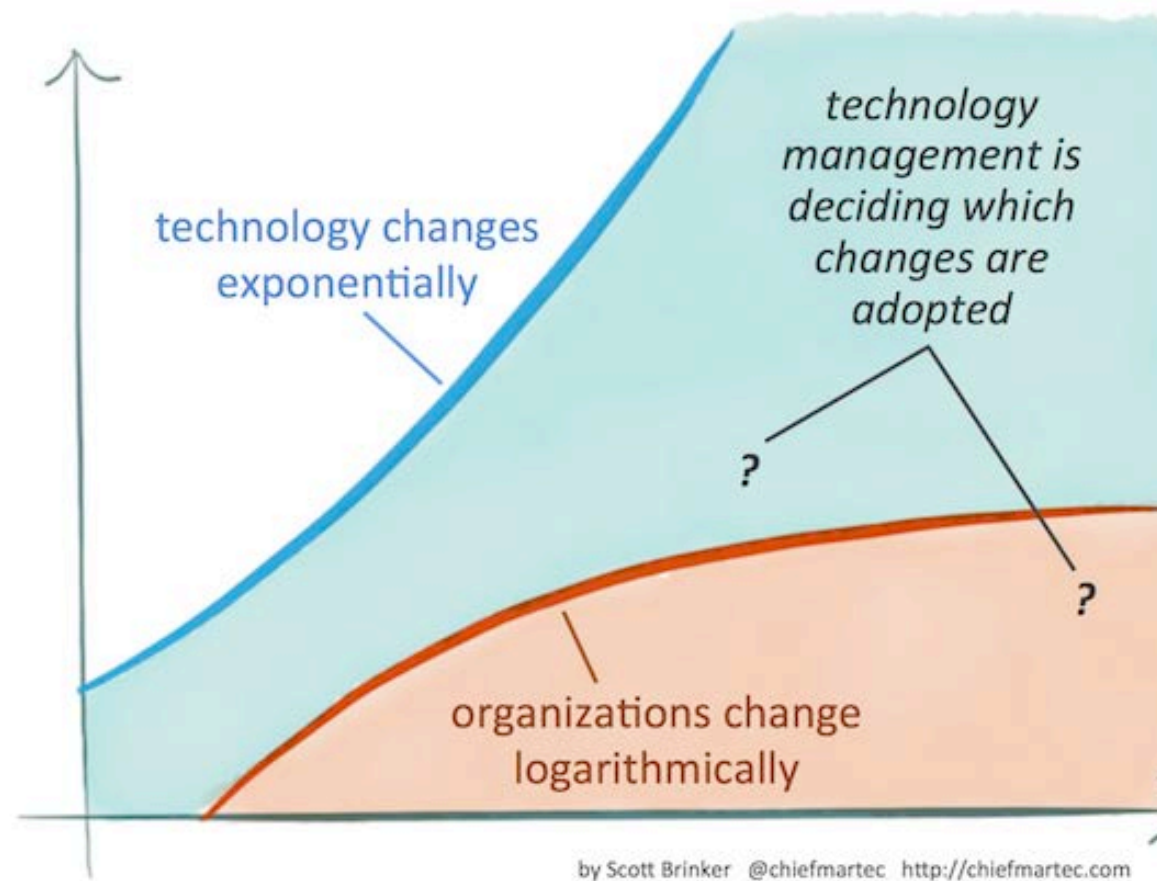


COMPUTING POWER & BIG DATA

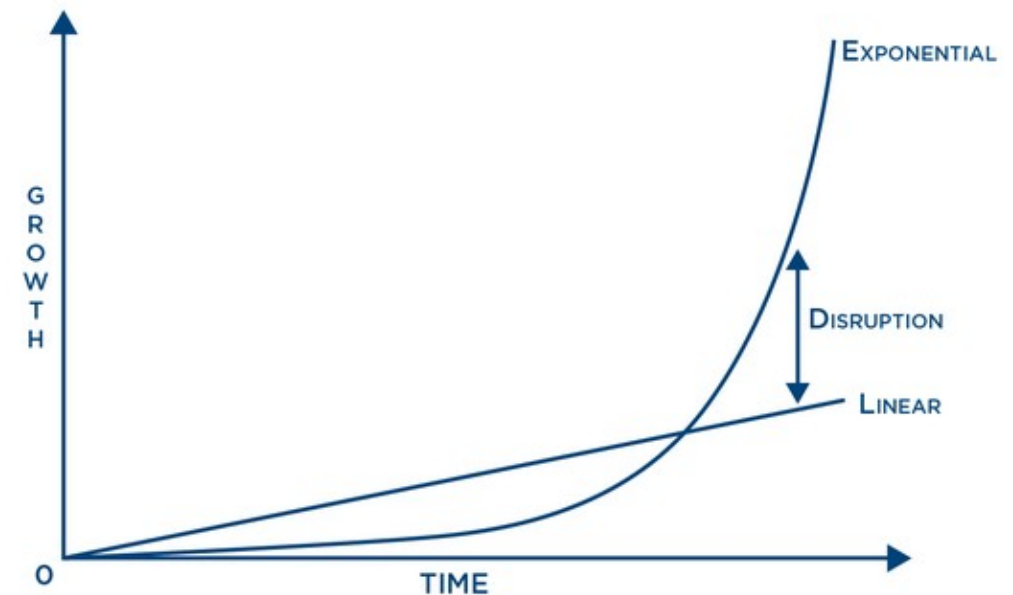
Exponential Growth / Exponential Disruption



Technology and Organizations rate of change: “Exponential” vs. “Logarithmic” Organisations



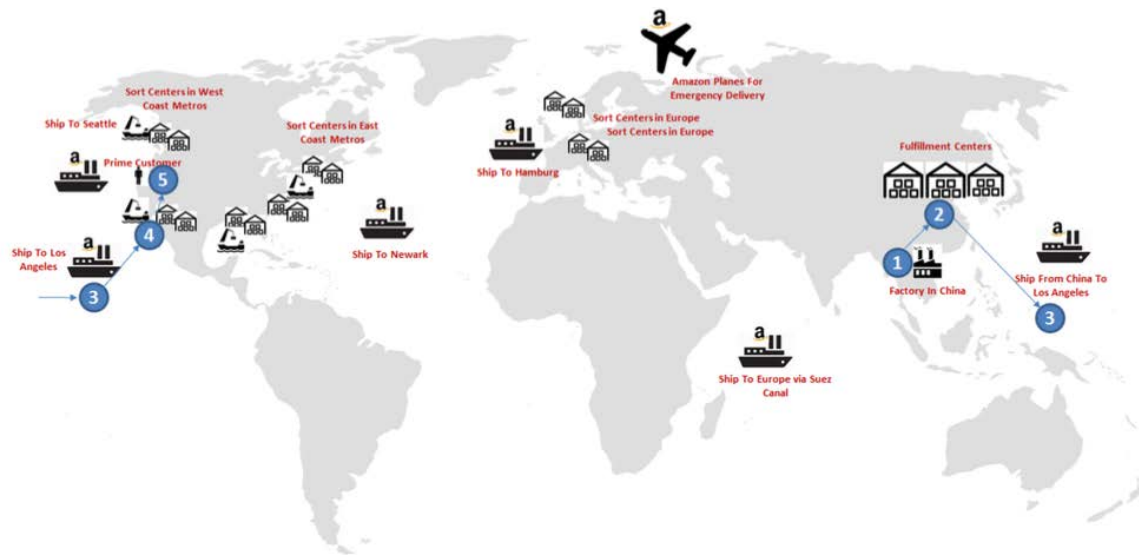
Linear vs. Exponential



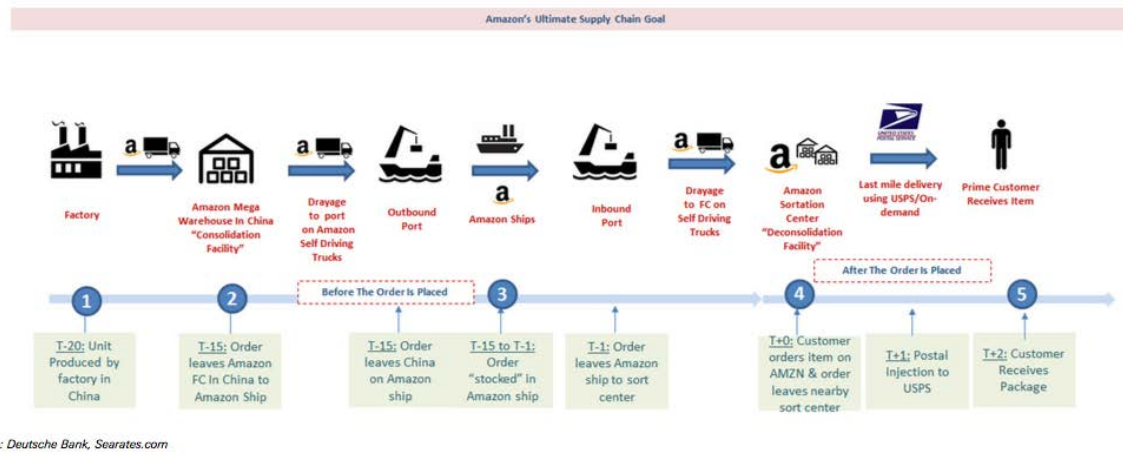
Source: Salim Ismail, Michael Malone and Yuri Van Geest, *Exponential Organizations* (New York: Diversion books, 2014).

AMAZON LOGISTICS Disruption: Leasing ships as “Active sortation centres”

Figure 54: Future Of Amazon Supply Chain



The ships serve as "active sortation centers" potentially taking advantage of the "anticipatory package shipping" patent from 2013, but on boats (vs. trucks) whereby [Amazon](#) predicts demand in every coastal population center and has inventory-in-transit



Autonomous navigation is deep learning AI heavy



COMPUTER VISION AND DEEP NEURAL NETWORK PIPELINE

DRIVE PX 2 platforms are built around **deep learning** and include a **powerful framework (Caffe)** to run **DNN models** designed and trained on **NVIDIA DIGITS™**. DRIVE PX 2 also includes an advanced computer vision (CV) library and primitives. Together, these technologies deliver an impressive combination of detection and tracking.



[NVIDIA Home](#) > [Products](#) > [Technologies](#) > [Deep Learning](#)



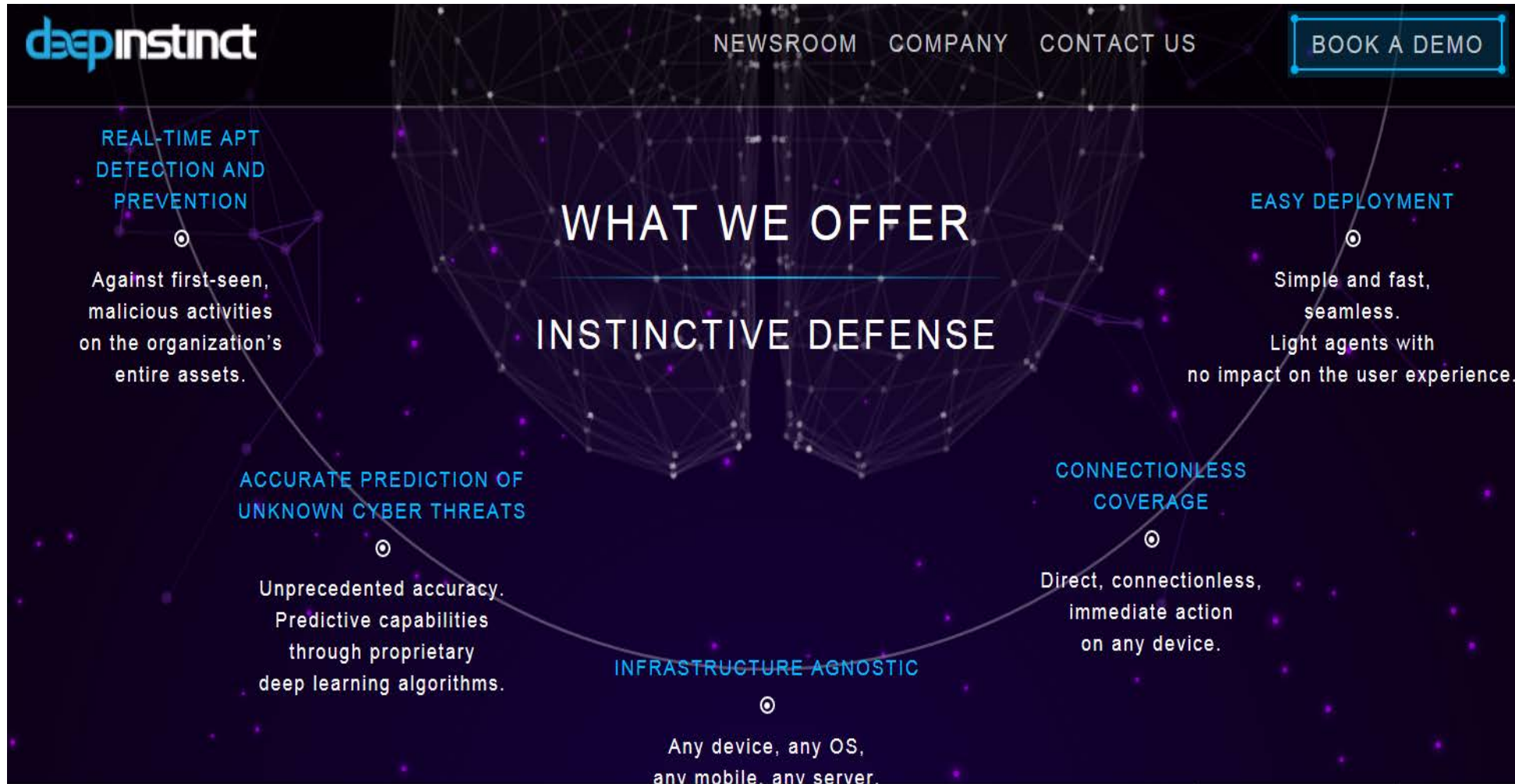
Nvidia's bet on deep learning and autonomous cars drives stock to record highs

By **Therese Poletti**

Published: Aug 11, 2016 8:17 p.m. ET



Deep learning technology for cybersecurity

The image shows a screenshot of the Deep Instinct website. The background is dark blue with a network graph pattern of white lines and dots. The Deep Instinct logo is in the top left. Navigation links 'NEWSROOM', 'COMPANY', and 'CONTACT US' are in the top center. A 'BOOK A DEMO' button is in the top right. The main heading 'WHAT WE OFFER INSTINCTIVE DEFENSE' is centered. Five feature boxes are arranged around the center, each with a title, a bullet point icon, and a description. The features are: Real-time APT Detection and Prevention, Easy Deployment, Accurate Prediction of Unknown Cyber Threats, Connectionless Coverage, and Infrastructure Agnostic.

deepinstinct

NEWSROOM COMPANY CONTACT US

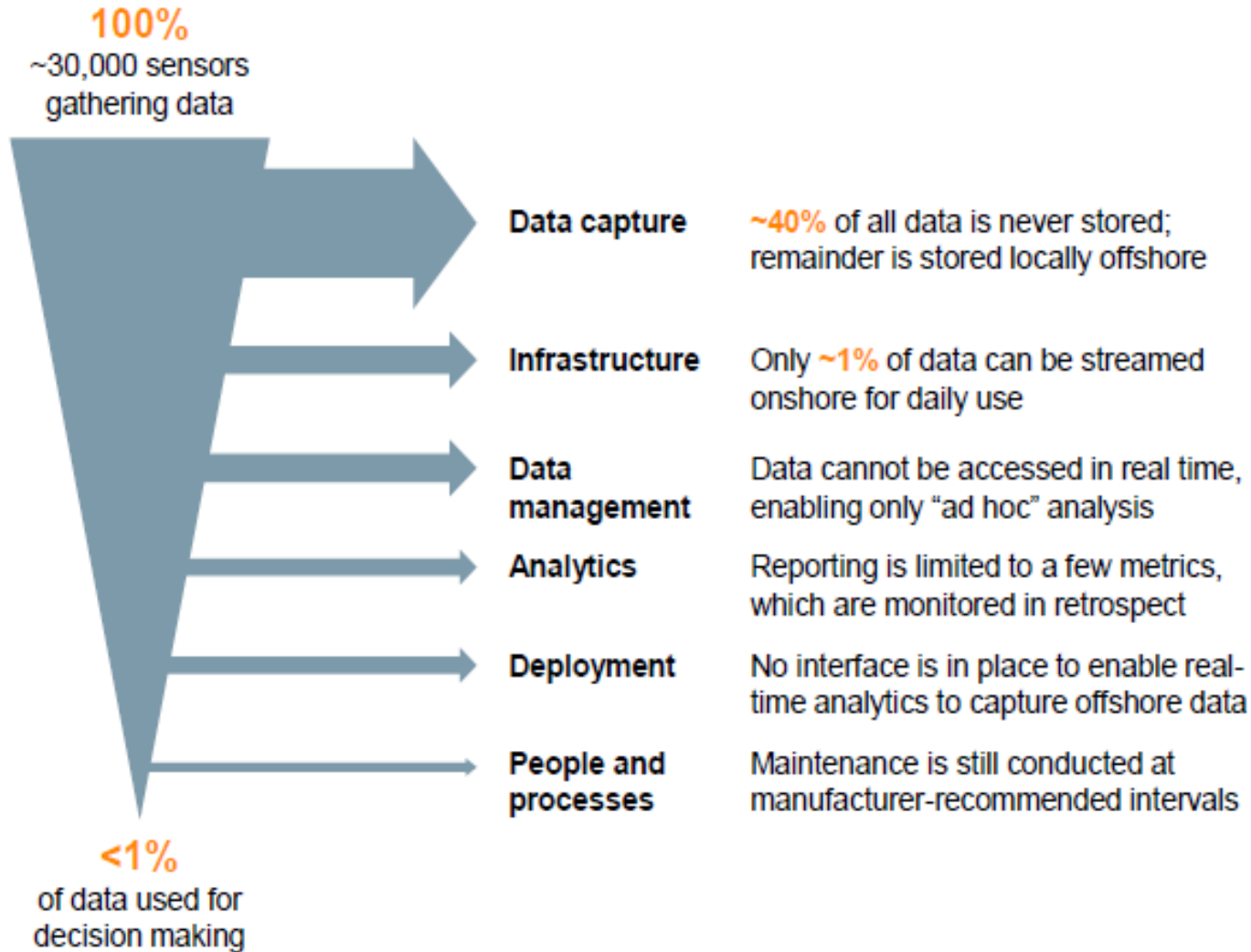
BOOK A DEMO

WHAT WE OFFER

INSTINCTIVE DEFENSE

- REAL-TIME APT DETECTION AND PREVENTION**
 - Against first-seen, malicious activities on the organization's entire assets.
- EASY DEPLOYMENT**
 - Simple and fast, seamless.
 - Light agents with no impact on the user experience.
- ACCURATE PREDICTION OF UNKNOWN CYBER THREATS**
 - Unprecedented accuracy.
 - Predictive capabilities through proprietary deep learning algorithms.
- CONNECTIONLESS COVERAGE**
 - Direct, connectionless, immediate action on any device.
- INFRASTRUCTURE AGNOSTIC**
 - Any device, any OS, any mobile, any server.

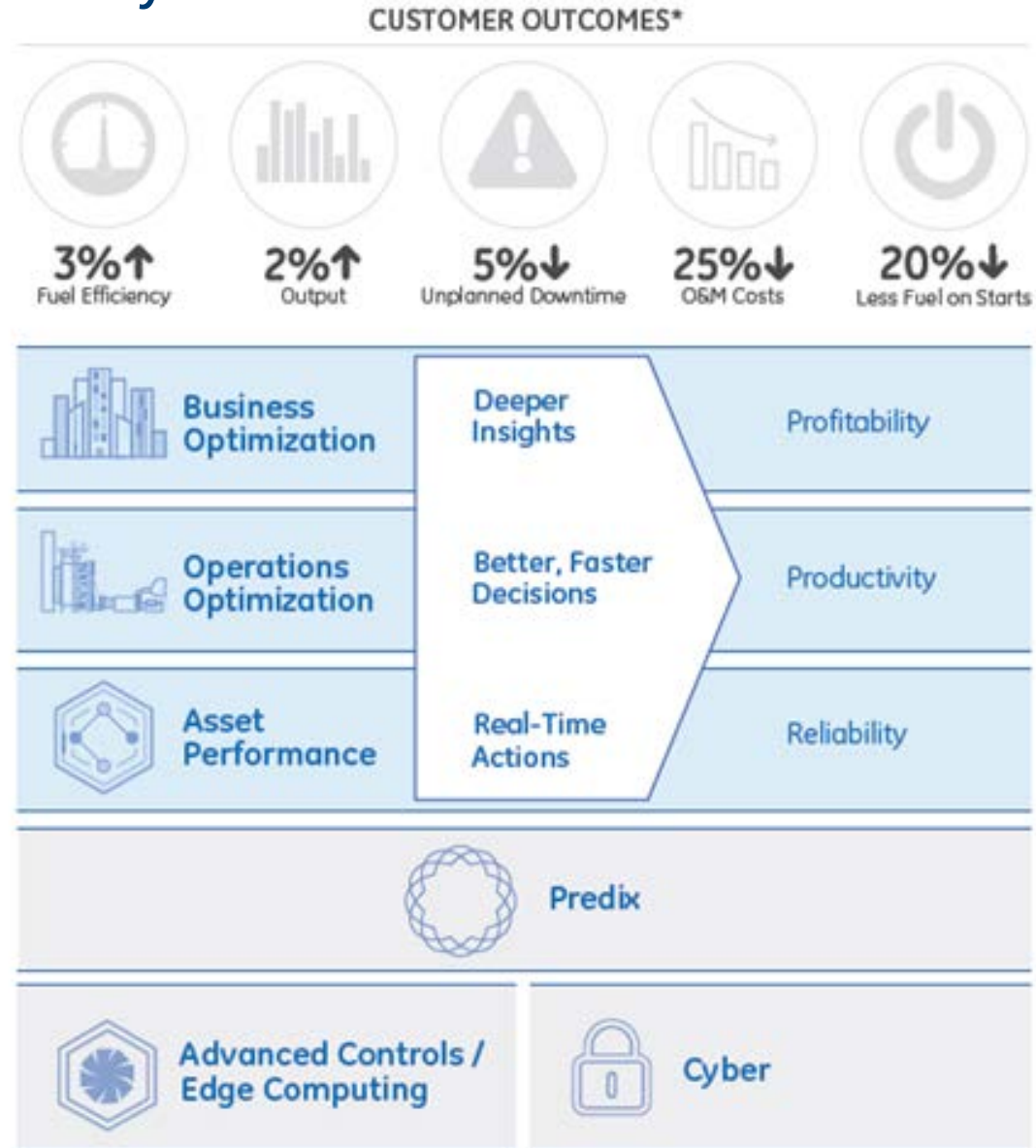
Size of the Prize – The Offshore Industry



Too many sensors producing little insight and actions - the untapped data treasure trove in the offshore industry



Size of Price – Power Industry



BIG DATA & TECHNOLOGY into SHIPPING: Cyber-enabled Ship

Or the implications of adoption of ***DIGITALISATION and CONNECTIVITY*** in Shipping



Autonomy levels (AL) for Cyber-enabled Ships



AL0

- Manual – no autonomous function



AL1

- On-ship decision support



AL2

- On and off-ship decision support



AL3

- 'Active' human in the loop



AL4

- Human on the loop – operator/supervisory



AL5

- Fully autonomous (& rarely supervised)



AL6

- Fully autonomous (& with no supervision)

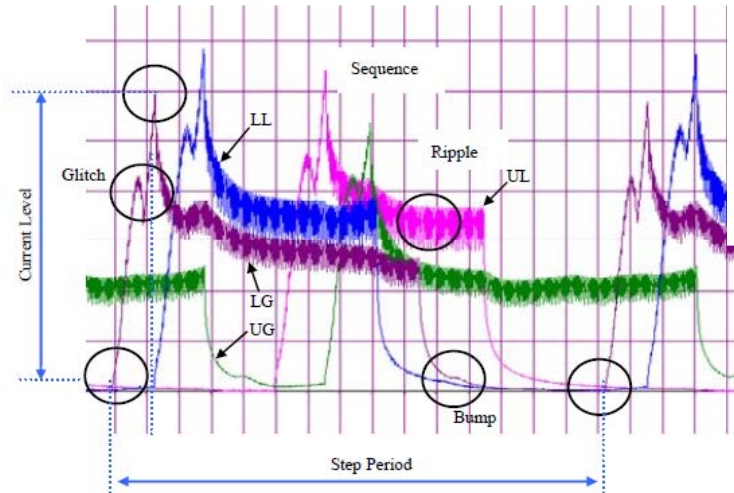
Cyber CBM? – From “not working” to advanced data-driven algorithms



Periodic
Inspection and
Maintenance

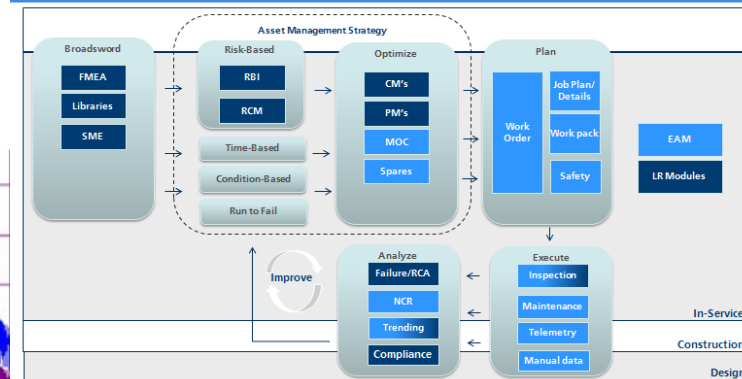
Investing in Big Data and Technology

Condition
Monitoring
(MCM)



Cyber CBM

LR Axxim™ sustainable workflow within the EAM



Cyber-enabled Ships – Four Streams Interacting



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