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Is Your Plant Cloud-Ready?

Why You Should Care,
and How KBC Can Help You

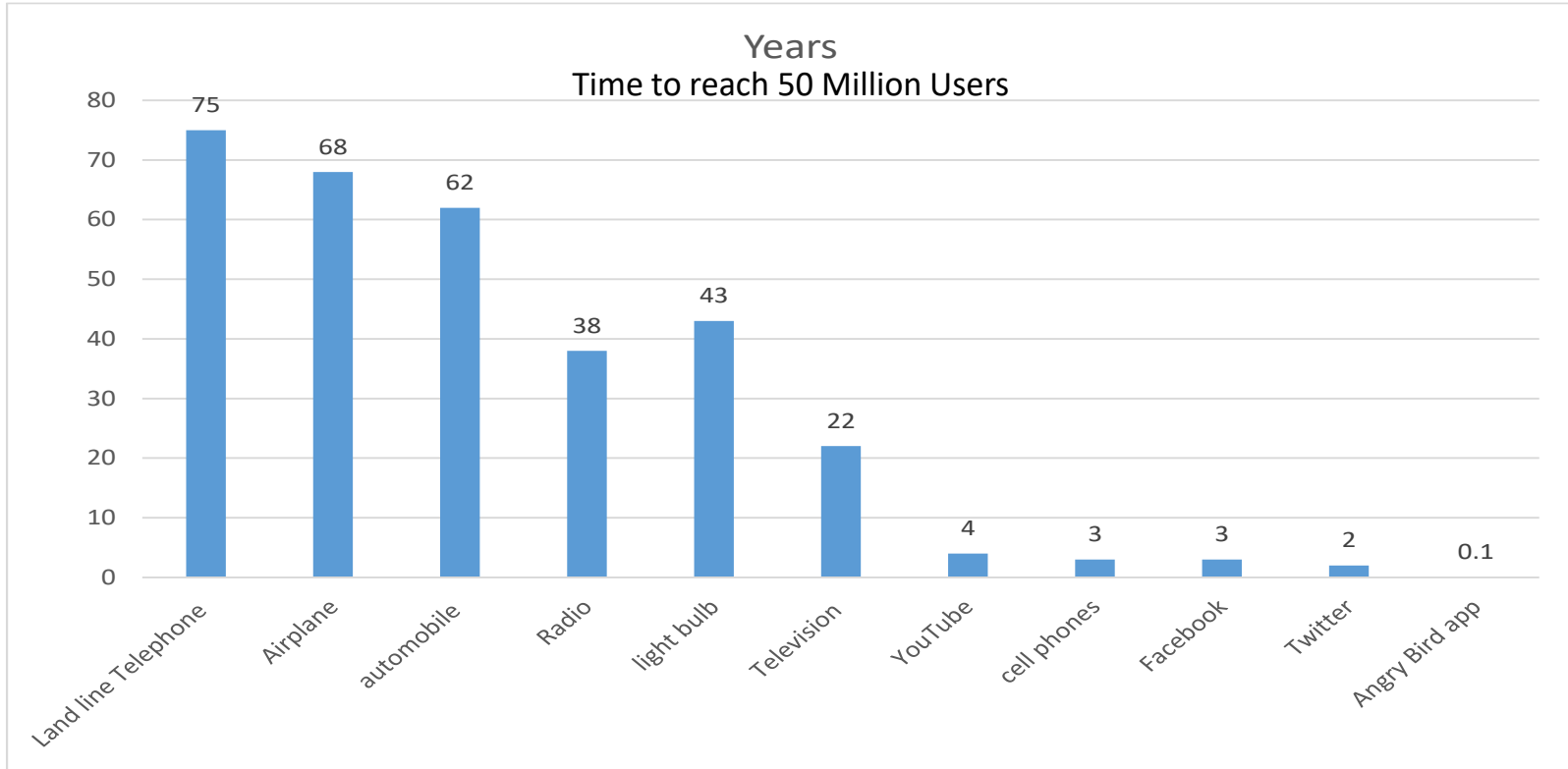
Mel Larson/ Lisa Williams,
Principle Consultant
Manager, US Operations, IT and IIoT Services

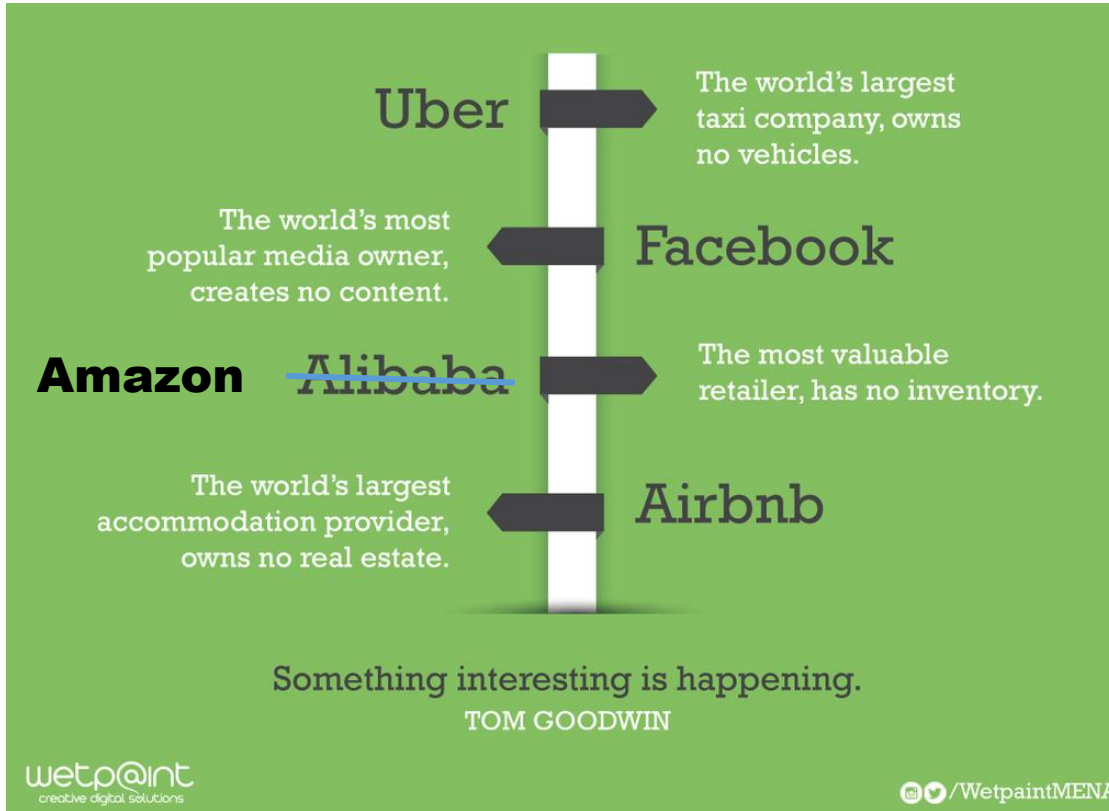
All about
EXCELLENCE

Perspective of Change



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Uber → The world's largest taxi company, owns no vehicles.

← The world's most popular media owner, creates no content. **Facebook**

Amazon ← ~~Alibaba~~ → The most valuable retailer, has no inventory.

← The world's largest accommodation provider, owns no real estate. **Airbnb**

Something interesting is happening.
TOM GOODWIN

wetpaint creative digital solutions

📱 /WetpaintMENA

- “It is easy to ignore not only the speed at which disruption caused by technology is affecting society, but the acceleration in the pace of change. This acceleration and its effect on markets, companies and labor is astonishing.” - *Barry L. Ritholtz*
- Communications by
 - iMessage™, SnapChat™, Twitter™, Skype™, FaceTime™

Top Innovations of 2017 (per MIT)



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Reversing Paralysis

- Using electrodes in the Brain to stimulate muscle movement

Paying with your Face ID recognition

- Already on TV Ads

360° Selfie cameras

Gene Therapy 2.0 (this is exciting and scary)

Artificial intelligence learning

- Learning with experimenting without a human involved

Self Driving Trucks / Cars

Practical Quantum Computer

- Computing power moving into consumer front

Hot Solar Cells

- Recovery of heat from solar cells improves value and energy benefits

BotNet of things (Human to systems connectivity and hacking)

Changes in last Ten years in Refining



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Use of Remote Technologies for inspections

- Drones using Thermal scans for external inspections
- Remote controlled devices for confined space inspections

Intrinsically Safe Hand Held Devices

- Using Universal Product Code (UPC) for logging remote data
- Tracking of local reading into a historian for improved monitoring

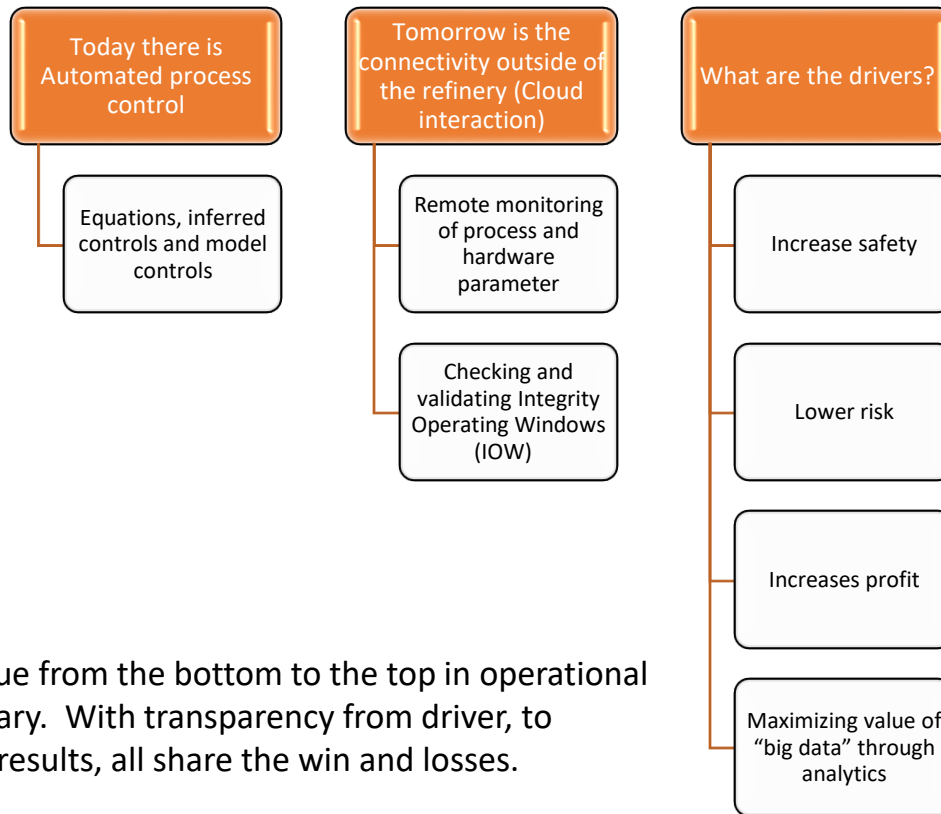
Use of Virtual Reality

- EPC firms using for 3D piping installation
- Safety training such as fire fighting
- Operating training to enhance class room and paper elements

Today / Tomorrow



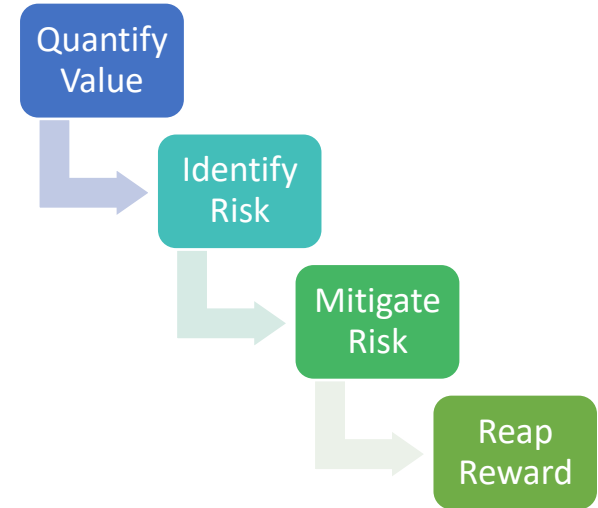
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This is where dialogue from the bottom to the top in operational excellence is necessary. With transparency from driver, to implementation, to results, all share the win and losses.

Why Does Cloud-Readiness Matter?

- “Cloud” applications offer some advantages over “On-Premise”
 - Quick to deploy; quick to terminate
 - Scalable
 - Service model vs Product model
 - Potentially accessible from anywhere
 - Potentially accessible from any internet-connected device
 - Little to no additional IT infrastructure
 - Benefits aligned with costs
- Most plant applications derive value by referencing plant data
 - The more timely the data, the higher the application value
 - The more reliable the data, the higher the application value
 - The more accurate the data, the higher the application value
 - The more relevant the data the higher the application value
- Must identify and mitigate risks



Is Your Data Ready?

- Is the data quality adequate?
 - Signal quality
 - Calibration up-to-date
 - Data sufficiency (e.g. for material balance...)
 - Data tagging (e.g. Deg F not Deg C; Amps not Volts...)
 - Source data issues propagating to other systems
- Is the “Digital Twin” out of date?
 - Plant asset data model references (Wrong tag? Necessary tag not included)
 - Process model updates (As plant changes, does model?)
 - What about Maintenance model; ERP model; HR model...
 - How is model synchronization managed
- Are there controls over manually entered data?
 - Assurance that it matches reality
 - Process time stamp vs data entry time stamp
 - Approval
 - Over-writing
 - Audit process



Is Your Infrastructure Ready?

- Do policies exist for connecting systems internally
 - Who owns this issue – IT or OT?
 - Who polices it?
- Do policies exist for connecting systems externally
 - Who owns this issue – IT or OT? Legal?
 - How are 3rd parties embraced within your policies
 - Who polices it?
- Is your infrastructure up to the task
 - Capacity limitations
 - Aging assets
 - Cybersecurity gaps
 - How to manage non-corporate assets (e.g. personal laptop or cell phone) connecting to corporate network
- Software
 - Tracking license counts/seats
 - Version mismatches
 - Security patching



Are Your People Ready?

- Does management embrace the Cloud?
 - Do they understand the benefits and risks?
 - Do they accept greater empowerment of users?
 - Will they fund training?
 - Is there a clear definition and agreement on which systems are considered “systems of record” (Where is the “truth?”)
 - Is Cloud seen as a new business imperative or just a fad?
- Processes and procedures
 - Do you have data governance processes?
 - Do you have clear and well-communicated usage policies?
 - Do your 3rd parties agree to those same process and policies?
 - Can you accommodate legacy systems as well as the “latest and greatest”
- Capabilities and skills
 - Are evergreen processes in place
 - Can solutions tolerate rapid staff turnover (IT resources are scarce and in-demand)



How Can KBC Help?

- Perform an assessment of policies and procedures
 - OT & IT Governance, Legal, Cybersecurity, etc.
- Review and correct your data concerns
 - Resolve quality issues
 - Add/replace instrumentation
 - Validate data propagation across systems
 - Update models and calibrate
 - Cleanse bad data
 - Establish data governance process
- Analyze your infrastructure
 - Address capacity and depreciated equipment concerns
 - Add defense-in-depth strategies to protect source systems
- Prepare your people
 - Discover and address latent organizational weaknesses around source systems and data quality





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Talk to a KBC Representative to Discover How We Can Help You Be Cloud-Ready

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