



Navigating Technology Landscape – A Call for Innovative Leadership
Theme: *The 21st Century Leadership: Convergence and Divergence*

Date: 2nd – 4th September 2019

Venue: Sarova White Sand Hotel, Mombasa

TIME: 9am to 10.30am
Dr. Ibrahim Halkano, PhD.

What Is Transformational Technology?

Any technology that requires a transformation in business processes or business model to fully exploit

Past examples:

- General purpose computing
- The Internet
- Mobile devices

Why Transformational Technologies Matter to Business Leaders

Positive

- Improve existing or create new business processes
- Create new products or services for customers

Negative

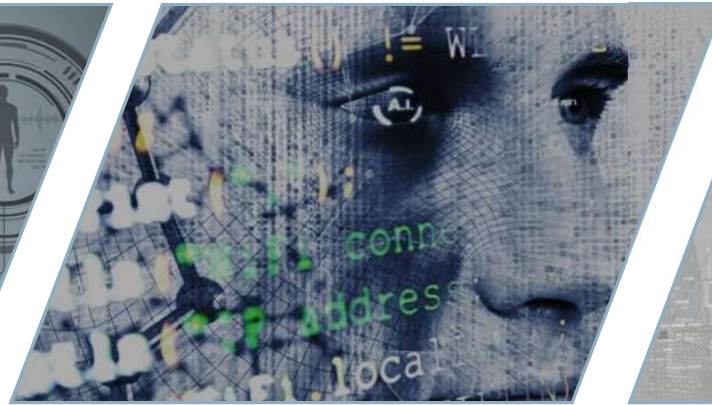
- Potential for competitive disruption greatly increases
- Organizational transformation is expensive and difficult

The Challenge Today?

There are no fewer than three transformational technologies to consider



Internet of Things



Artificial Intelligence



Blockchain

Together, Each is unprecedented opportunity and challenge



IoT Is Transforming a **World of Things** to a **World of Data**

The Enterprise IoT Opportunity Is Enormous

Improve existing business processes

Create entirely new business processes

Offer customers new products and services

Enterprise Organizations See This Opportunity

50

Billion devices
by 2018

8

Zettabytes
of data today

\$3

Trillion annual
spend by 2020

IoT Will Transform Core Business Functions

Marketing & Sales



- Customer insights
- Flexible pricing
- Usage tracking
- Self service

Operations



- Asset tracking
- SLA monitors
- Fleet management
- Health tracking

R&D



- Product usage analytics
- Quality management
- SLA tracking

IT



- Security & identity
- Data integration
- Automated analytics
- Fast app deployment

Service & Support



- Remote service
- Condition-based maintenance
- Inventory planning

Business Leaders Just Aren't Seeing the Benefits Yet

< 1%
of data in digital
universe is
analyzed today ¹

60%
of IoT projects fail ²

1. IDC: The Digital Universe in 2020

2. Internet of Business: Six out of ten IoT projects fail at trial stage

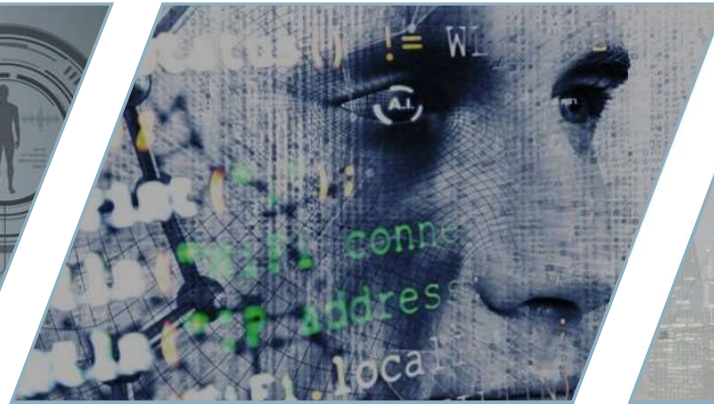
Capitalizing on IoT Isn't Always Easy



- How do you:
- Accelerate time-to-value?
 - Minimize cost and complexity?
 - Leverage and build on existing investments?



Internet of Things



Artificial Intelligence



Blockchain

artificial intelligence

The ability for computer systems to perform tasks that normally require human intelligence.

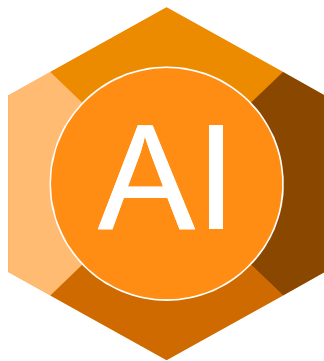
machine learning

The branch of AI focused on learning and improved decision-making.

Especially relevant in enterprise settings.

AI Will Be Transformational for Every Organization

Artificial Intelligence will reshape every aspect of how we do business



How we interact with
our customers

Smart, personalized engagements

How we create new
goods and services

New offerings infused with intelligence

How we operate our
businesses

Insightful recommendations and
decisions everywhere

Potential of Applied AI in the Enterprise

Enterprise AI delivers context-driven optimization across systems in real-time

Marketing



Personalize offers based on individual customer requirements

HR



Increase retention and job satisfaction through best match of employee skills

Service



Eliminate waiting with context-aware personalized chatbot interactions

Finance



Manage risk with predictive scenario analysis & planning

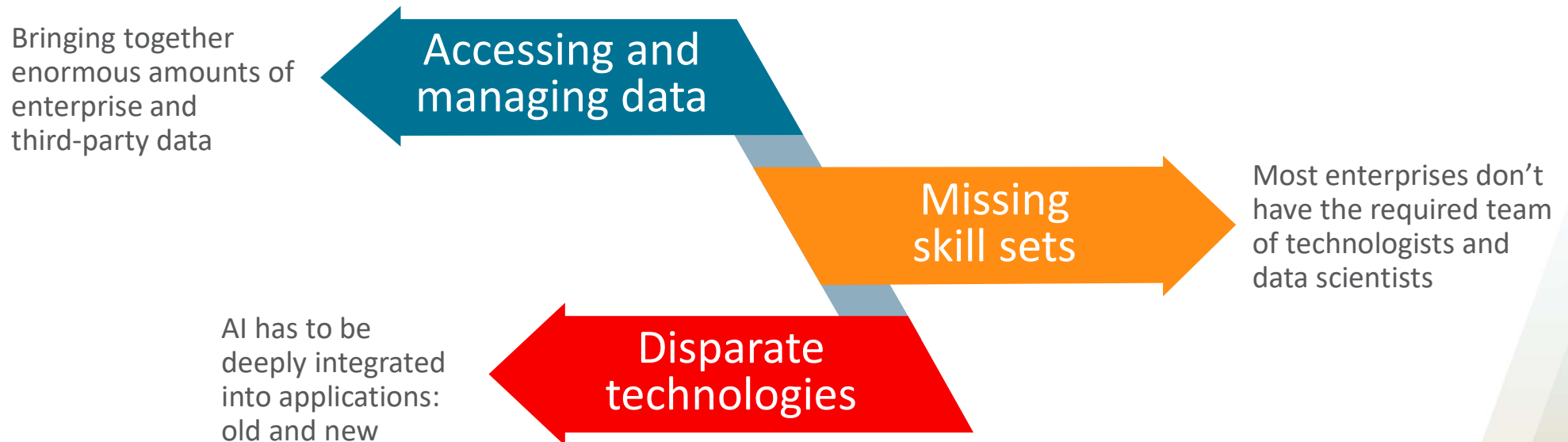
IT Ops & Security



Automatically detect threats and stay ahead of malicious attacks

Hurdles to Overcome on the Path to AI Adoption

Limited data, limited skills and complex technology stack make AI adoption difficult



Five Key Considerations for Enterprise AI Solutions

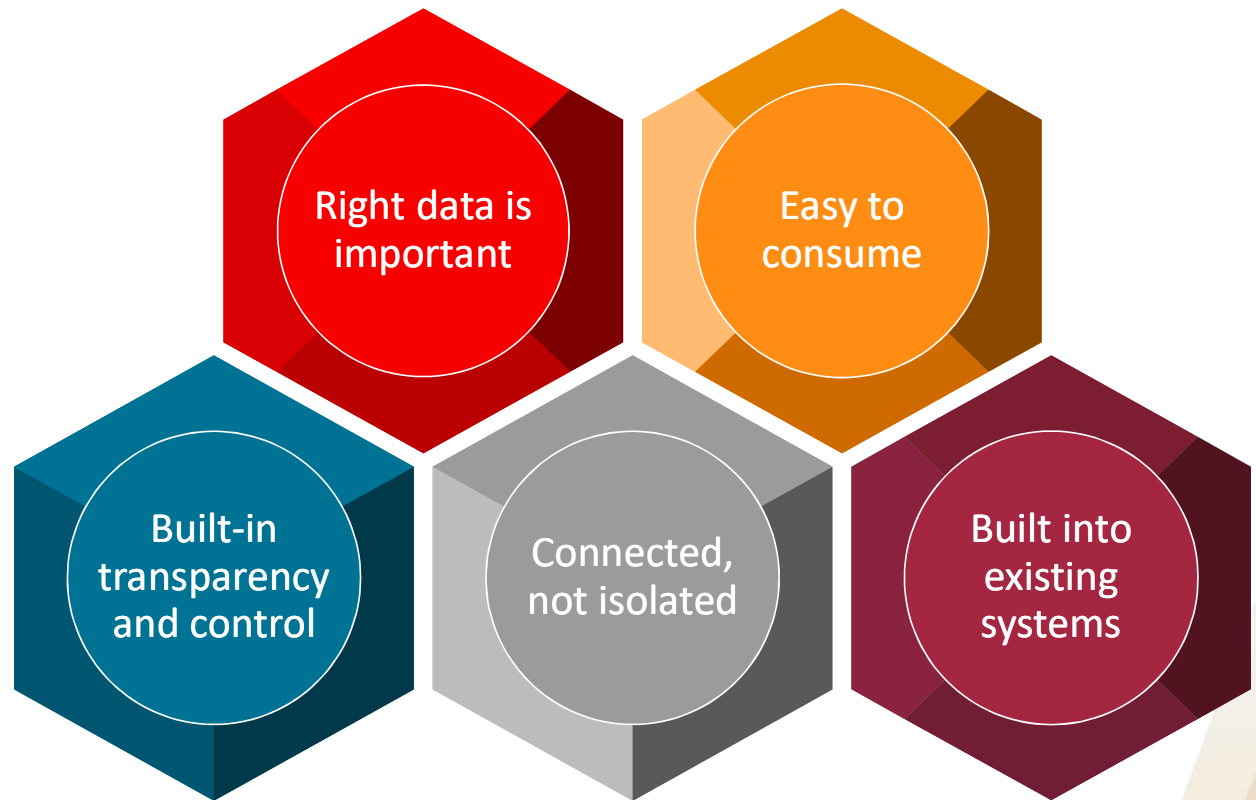
Combining internal and external data sets means better decision outcomes, delivered sooner

Delivering recommendations at the time of decision making speeds adoption

Seeing the big picture delivers better recommendations than isolated decisions

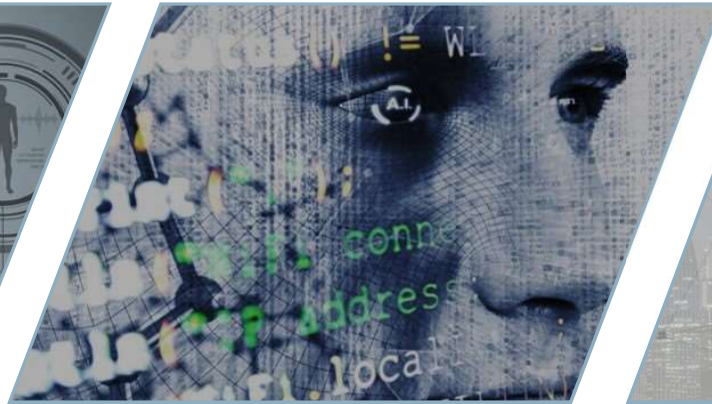
Understanding why decisions are made – and avoiding bad decisions – speeds adoption

Leveraging in-place investments makes financial and practical sense





Internet of Things



Artificial Intelligence



Blockchain

What Is Blockchain?

Unalterable
distributed
transaction logs

Can be private,
gated or public

Minimizes (or
eliminates) the
middleman

Trusted audit
records
everywhere

Typical Blockchain Use Cases

Digital
Currencies



Financial
Transactions



Extended
Supply Chain



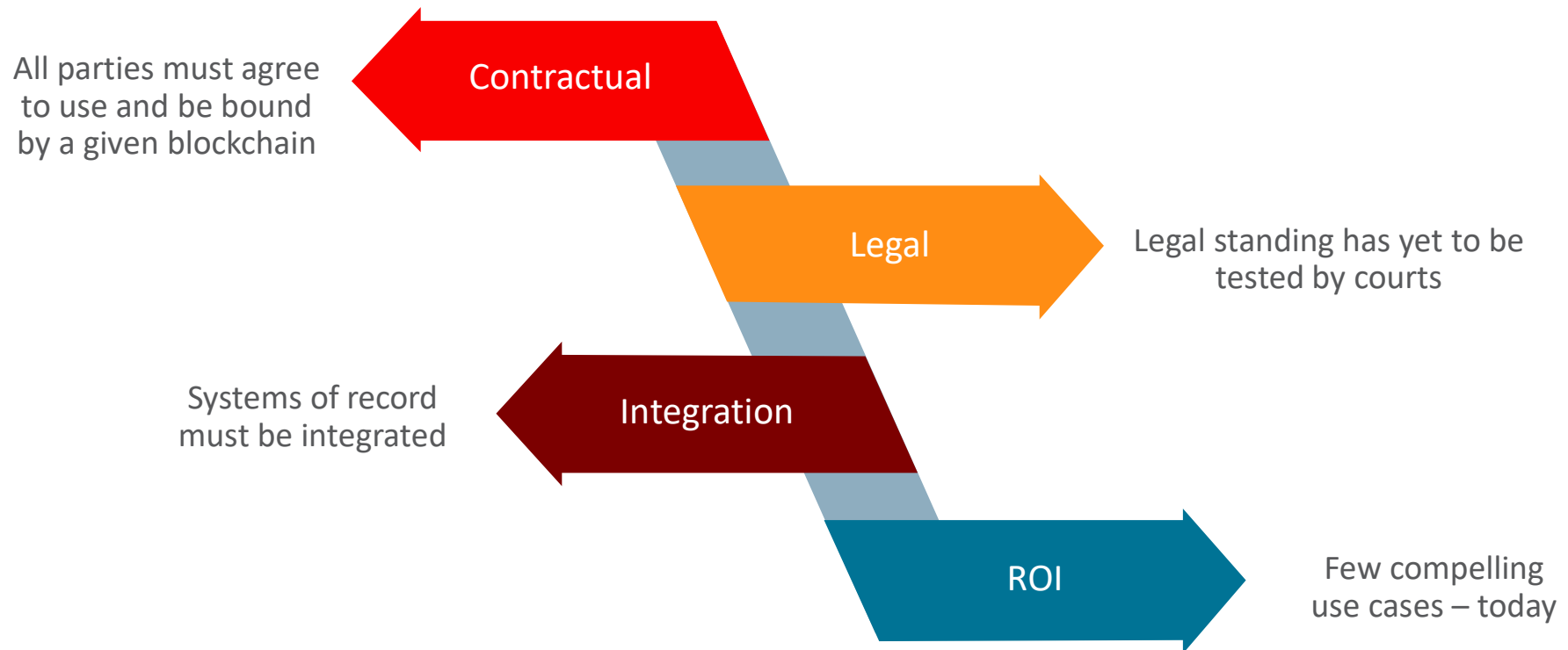
Government
Recording



Healthcare
Records



Hurdles to Overcome for Blockchain Adoption





New Human Interfaces Simplify Delivery of Capabilities

Voice Assistants

Chatbots

Augmented Reality
and Virtual Reality

Natural Interfaces Change Human to Computer Interactions

From

- Humans learning how computers communicate
- Learning curve
- Keyboard, mouse or touchscreen

To

- Computers learning how humans communicate
- Intuitive
- Spoken word, written messages, etc.



Benefits of Natural Human Interfaces

Shorter time to productivity

Less skill required to accomplish tasks

More efficient and intuitive interaction

Natural Human Interface Market Continues to Grow Rapidly

2B

mobile messaging
app users in 2018

\$5.7B

projected augmented
reality enterprise market
in 2021²

85%

customer relationships
will be managed with
intelligent automation
by 2020¹

¹ Gartner

² Juniper Research



Natural Human Interfaces Offer Real-Time, Targeted Interactions

Digital Virtual Assistants

- Powered by artificial intelligence
- Interact via messaging (chatbots) or voice (voice assistants)

Augmented Reality

- Real-time guidance overlaid on physical surroundings

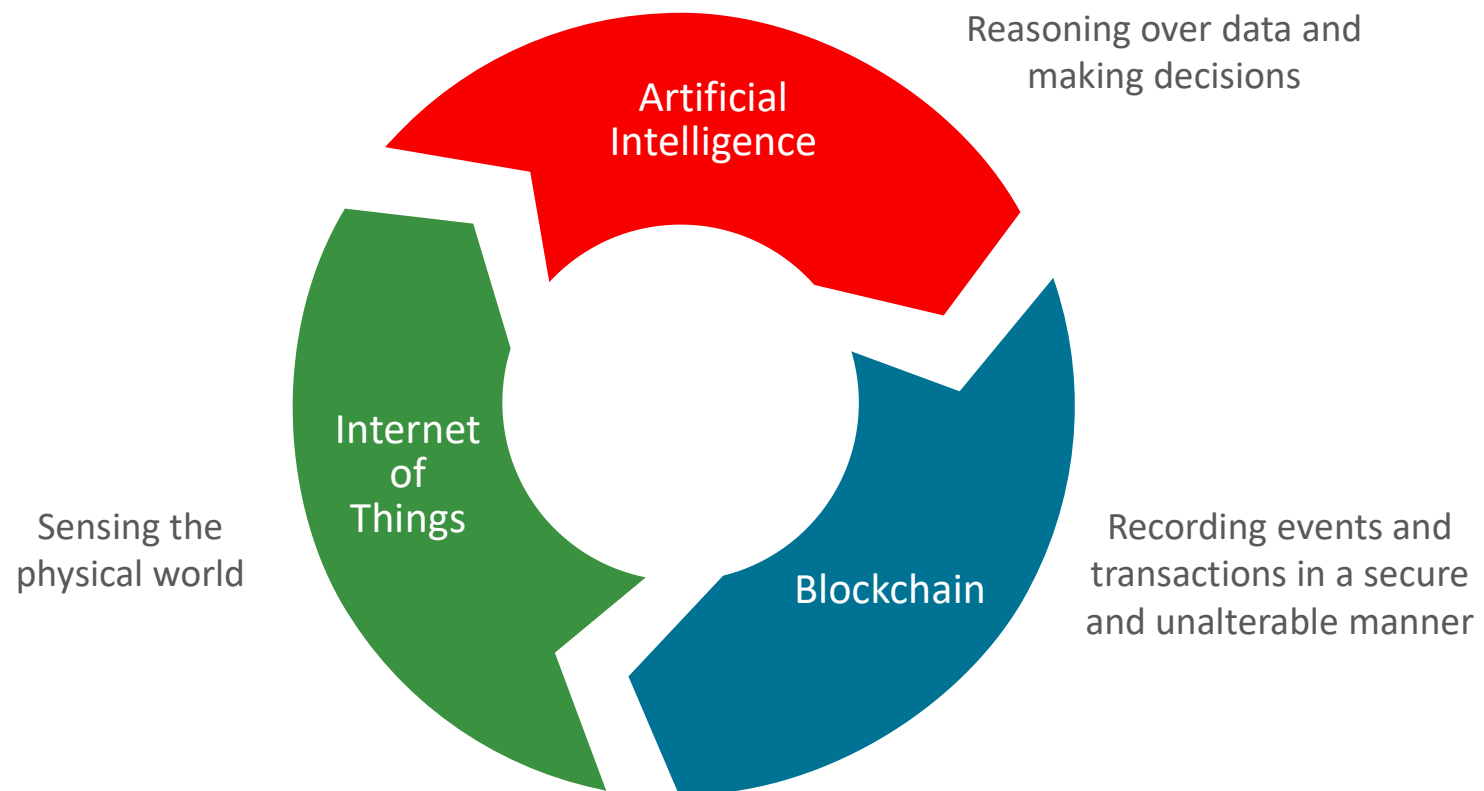
Virtual Reality

- Simulation of a physical environment

A person wearing a yellow safety vest over a blue and white plaid shirt is holding a black smartphone in their right hand and a clipboard with papers in their left hand. The background is blurred, showing a brick wall and a blue sky.

Digital Virtual Assistants

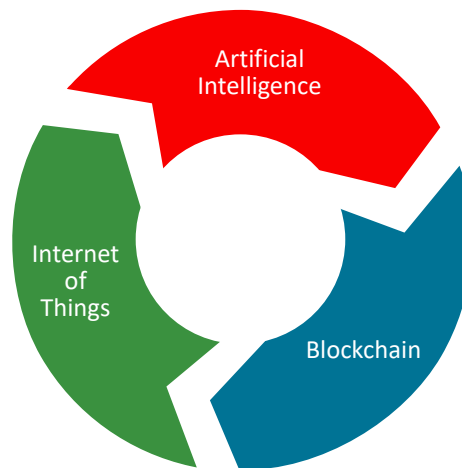
Real Transformational Power Arises from Combinations



Example: Smarter Homes from Reactive to Proactive

Today:

“Smart assistant, order me two pounds of coffee beans and six rolls of paper towels.”



Tomorrow:

“I’ve noticed you’re running low on coffee beans and paper towels. Would you like me to place the usual order?”

IoT senses the real world

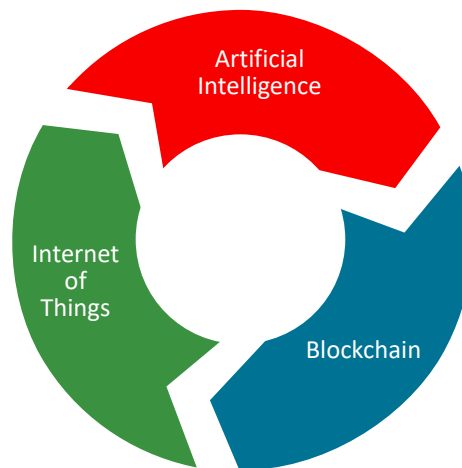
AI analyzes and makes decisions

Blockchain records everything permanently and securely

Example: Personal Healthcare in the US

Today:

- Scheduling doctor's appointments
- Reactive engagement after there's a problem
- Having to remember my personal medical history



Tomorrow:

- Wearing sensors that deliver continuous monitoring
- Proactive engagement before there's a problem, e.g. I forgot to take my meds again
- My entire medical history in one place, under my control

IoT senses the real world

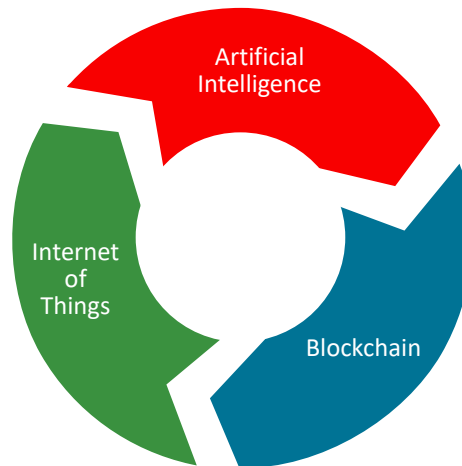
AI analyzes and makes decisions

Blockchain records everything permanently and securely

Example: Next-Gen Cybersecurity

Today:

- Disjointed silos of data
- Humans required to analyze and take action
- Humans make mistakes



Tomorrow:

- Uniform repository of log and audit data (IoT)
- Centralized AI analyzes, makes decisions, takes autonomous action
- Critical evidence protected by blockchain

IoT senses the real world

AI analyzes and makes decisions

Blockchain records everything permanently and securely

Transformational Technologies Will Soon Change...



Our
personal lives



Our
professional lives



Organizations
where we work



The society
where we live

How Cloud Has Changed the Equation

A top-down view of several people in business attire gathered around a large conference table. They are working together to assemble large, colorful puzzle pieces (yellow, blue, orange, and green) on the table's surface.

Enabler

Faster innovation of new services and new business models

A close-up image of a large, human hand gently cupping a small, realistic model of the Earth. The hand is positioned as if protecting or supporting the planet.

Economizer

Pay significantly less for IT services

A photograph of a large sumo wrestler in a black mawashi standing on a ring. A small child, also in a white mawashi, is standing in front of him, reaching up with both hands to touch the wrestler's chest.

Equalizer

All organizations now have access to the same capabilities

Transformative Technologies Deserve Your Attention



Focus on the big three: AI, IoT and Blockchain



Cloud levels the playing field for everyone



Organizational transformation will be the hard part

Advice for Leaders

Invest time to understand the big picture impacts each technology can make

Look at your business through a transformational lens;

Form a tiger team, pick one or two areas to experiment in

Start small, fail fast, learn quickly and don't be discouraged

When you find results, think "business transformation"

Impact of Technology on professions & industries: Jobs of today and Future

	Current Past	Current Future
1	Drivers (self driving cars),	Robot Manufacturer and Service Management
2	Farmer (smart Farms)	Raw Materials Management
3	Printing and Publishing(Twitter, blogs),	Big Data and AI Scientist
4	Cashiers(AI Vendor, Mobile Money),	Artificial Bodies manufacturers
5	Travel Agents(book online,air BnB),	eSports
6	Manufacturing workers(robot),	Phycologist and Therapist
7	Receptionist(, Referees	Gene designer for babies and pets
8	Waiting tables and bar tenders(Ipad SS),	Virtual World Designer
9	Bank tellers(Video call/MPEsa),	Entertainment
10	Military pilots and solders (Drone),	Cyber Security and Private data Brokerage
11	Fast food workers, Chefs (AI &Robot)	Biochemistry and tech Engineers
12	Telemarketers(Facebook, Google),	Real Estate Developers
13	Accountants and Tax Preparers(Robots),	Private Services for the Rich
14	Stock traders(AI Robot)	Elderly Care and End of Life Management
15	Construction workers (3D Print)	Small Jobs-Yet to be automated
16	Film/Movie Actors/Models(Animation)	Top 10% of your profession