The Leadership Edge: Employing Technology and ICT Skills in Advancing the Attainment of Vision 10:2022

A One-Day Leadership Emphasis Session for Management Team/Professorate of Covenant University

Prof. AAA. Atayero

The Vice-Chancellor, Covenant university, Ota, Nigeria.

14th November, 2017.

Presentation Overview

Introduction: Leadership and the ICT Revolution

Internet of Things (IoT) & Big Data Analytics

The Digital Divide and the Demands of Leadership

The Flat World & the Response of Leadership

The Leadership Mandate for Covenant University towards Vision 10:2022

Conclusion

Introduction

A good understanding of ***relevant and current*** Information and Communication Technologies ***(ICTs)*** is required for ***effective leadership*** in 21st century.

There is an urgent need for ***disruptive changes*** in leadership practices in developing countries for the region to leapfrog into the ***knowledge economy***.

Introduction

Information technology is a "***disruptive technology***" because it changes how bureaucracy organizes and works, how power is distributed or controlled, and how information is shared or protected.

ICT can enable an establishment to change from "command and control" organizations to ***knowledge-based, networked and learning organizations***.

Introduction

Electronic Leadership (***e-Leadership***) is a key ingredient to integrating Covenant University into the league of world-class universities through inclusive information.

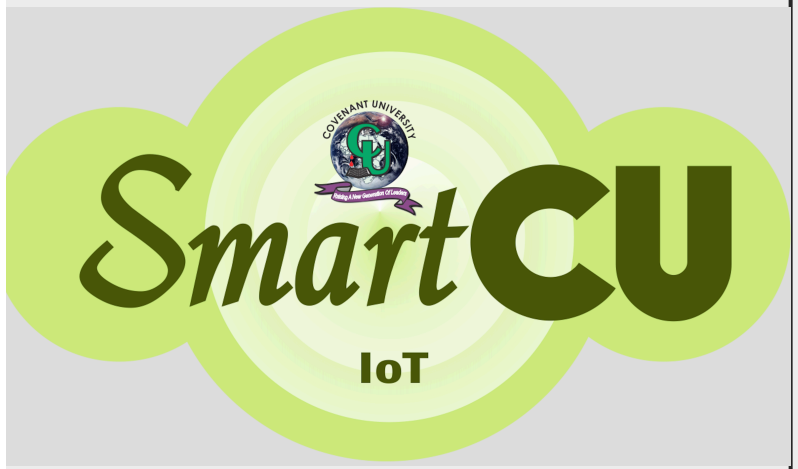
E-leadership requires leveraging the ongoing technological revolution to build competitive knowledge economy and inclusive information society in an increasingly global market-driven economy.

Introduction (Cont'd)

- In September 2015, the United Nations, in the '2030 Agenda for Sustainable Development (2030 Agenda)', stated that 'the spread of ***ICT*** and ***global interconnectedness*** has great potential to ***accelerate human progress***'

Global ICT Technology Trends
(Forbes 2017)

1. **Internet of Things** and Smart Home Technologies
2. Augmented Reality (AR) and Virtual Reality (VR)
3. **Big Data** & Machine Learning
4. Automation
5. Humanized Big Data
6. Cyber-physical Systems
7. Everything On-Demand



Internet of Things (IoT)

Internet of Things (IoT)

- IoT is the ***interconnections*** of:
  - computing devices;
  - mechanical and digital machines;
  - objects;
  - animals or people that are ***provided with unique identifiers***

Internet of Things (IoT)

- IoT enables connected things and people to ***transfer useful information*** over a communication network ***without*** requiring human-to-human or human-to-computer interaction.
- In simple words, IoT is a network of connected things.

Enablers of *IoT*

The ***size*** and ***cost*** of smart devices are reducing tremendously

There is a growing penetration of ***high-speed Internet access*** globally.

Battery technology has improved and ***solar recharging*** has been built into numerous devices.

Enablers of *IoT*

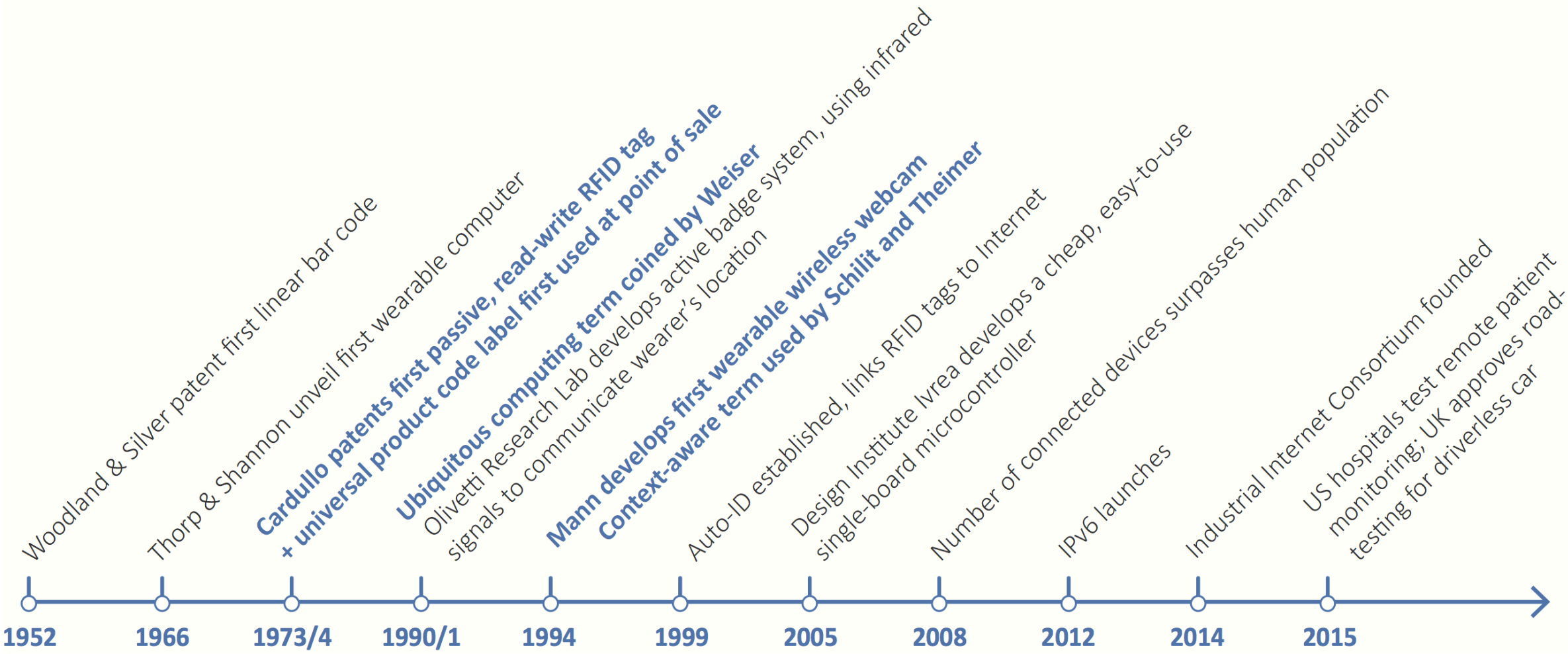
The introduction of ***Internet Protocol version 6 (IPv6)*** allows us to assign a unique network address to billions of devices.

The IPv4 was a 32-bit addressing system having 2^{32} unique addresses.

The IPv6 is a 128-bit system having 2^{128} $(3.4x10^{38})$ unique addresses.

There is high proliferation of ***smart devices*** that have in-built sensors and capabilities for Wireless Fidelity (Wi-Fi) and cellular wireless connectivity.

Timeline of Developments Leading to IoT



Source: ITU.

Drivers of *IoT*

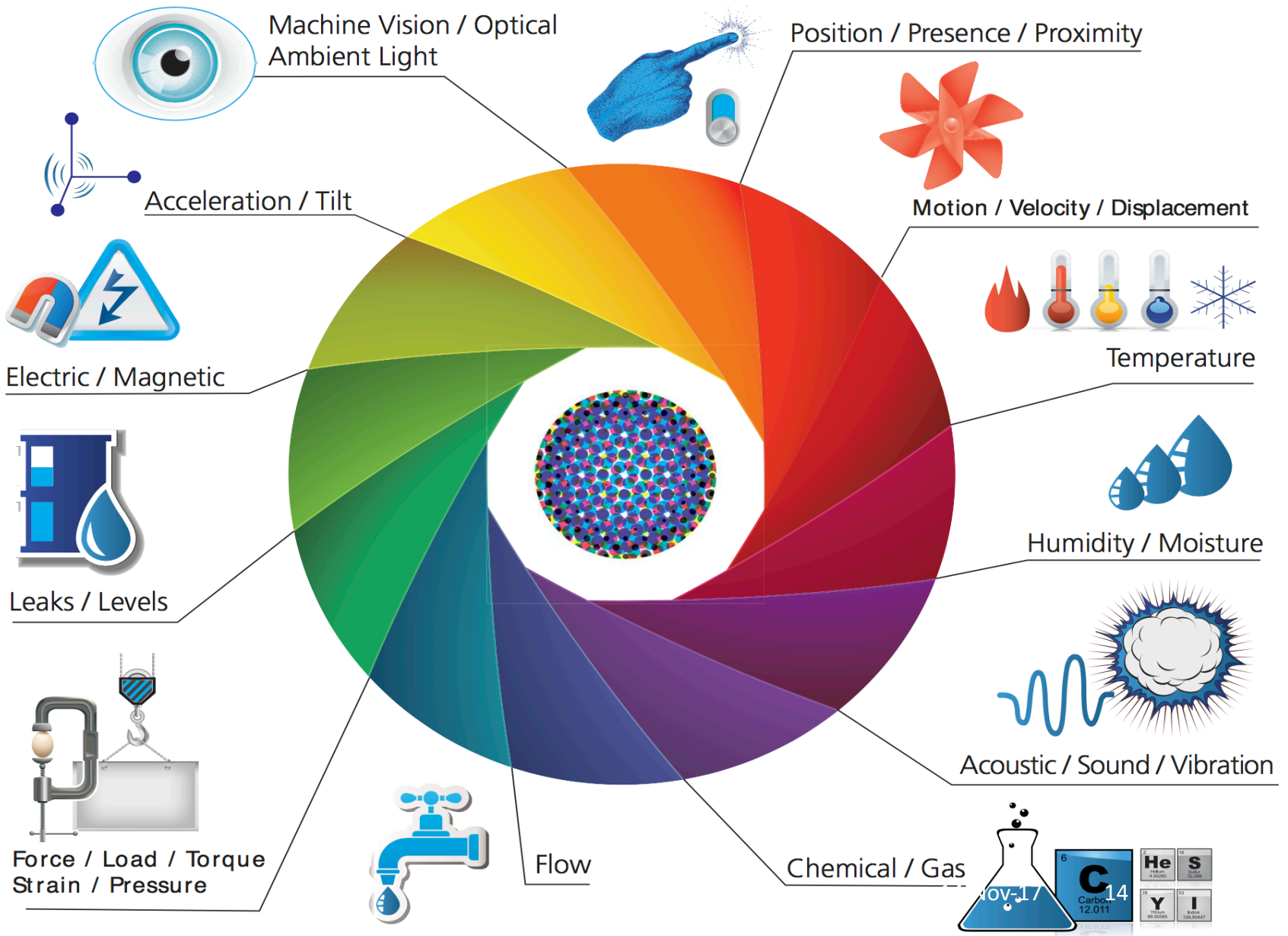
Sensors & Actuators

Connectivity

People & Processes

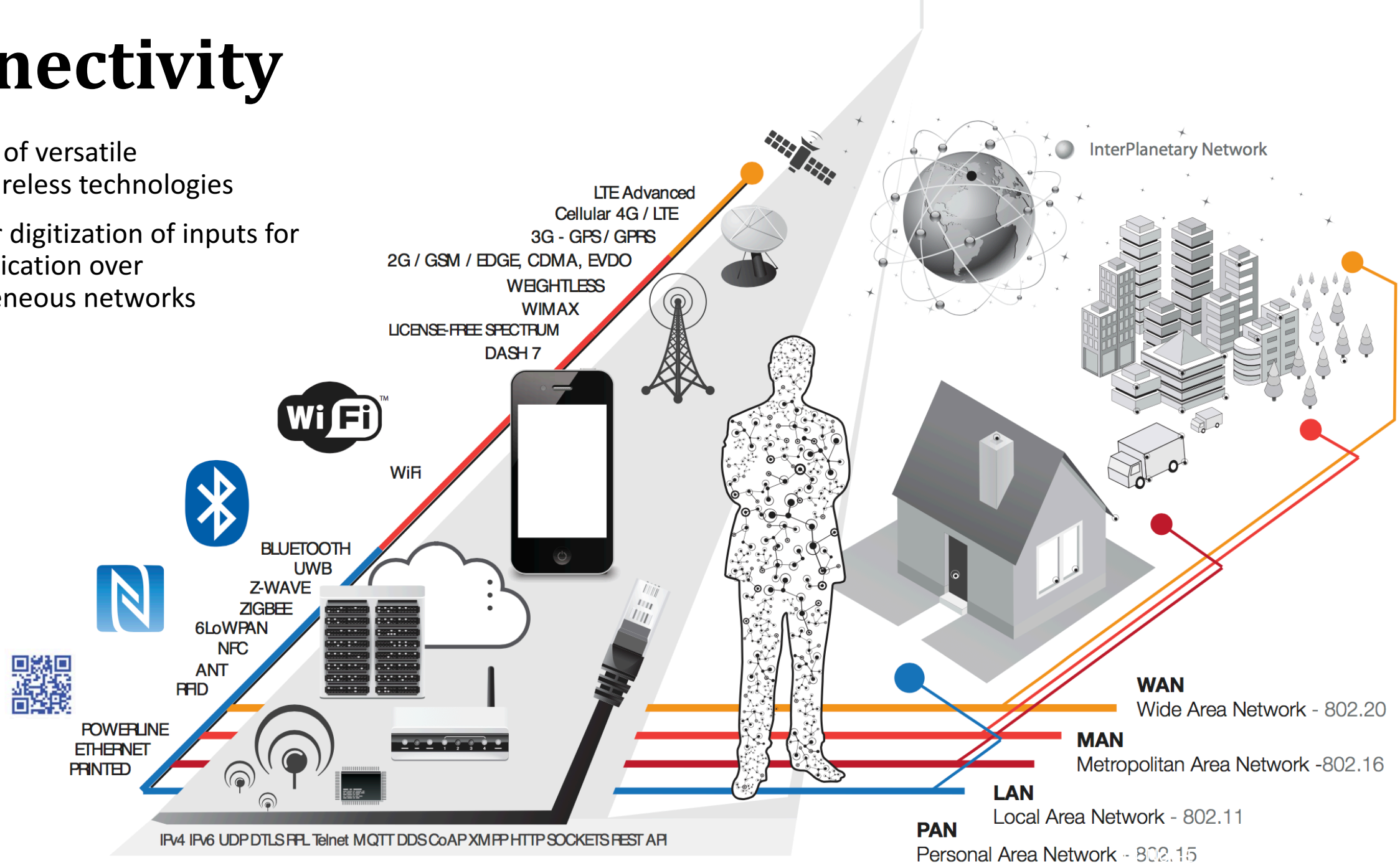
Sensors & Actuators

- The world is developing a digital nervous system
  - GPS – Location Data
  - Eyes – Cameras
  - Ears – Microphones
  - Sensors – Measure temp., pressure etc.



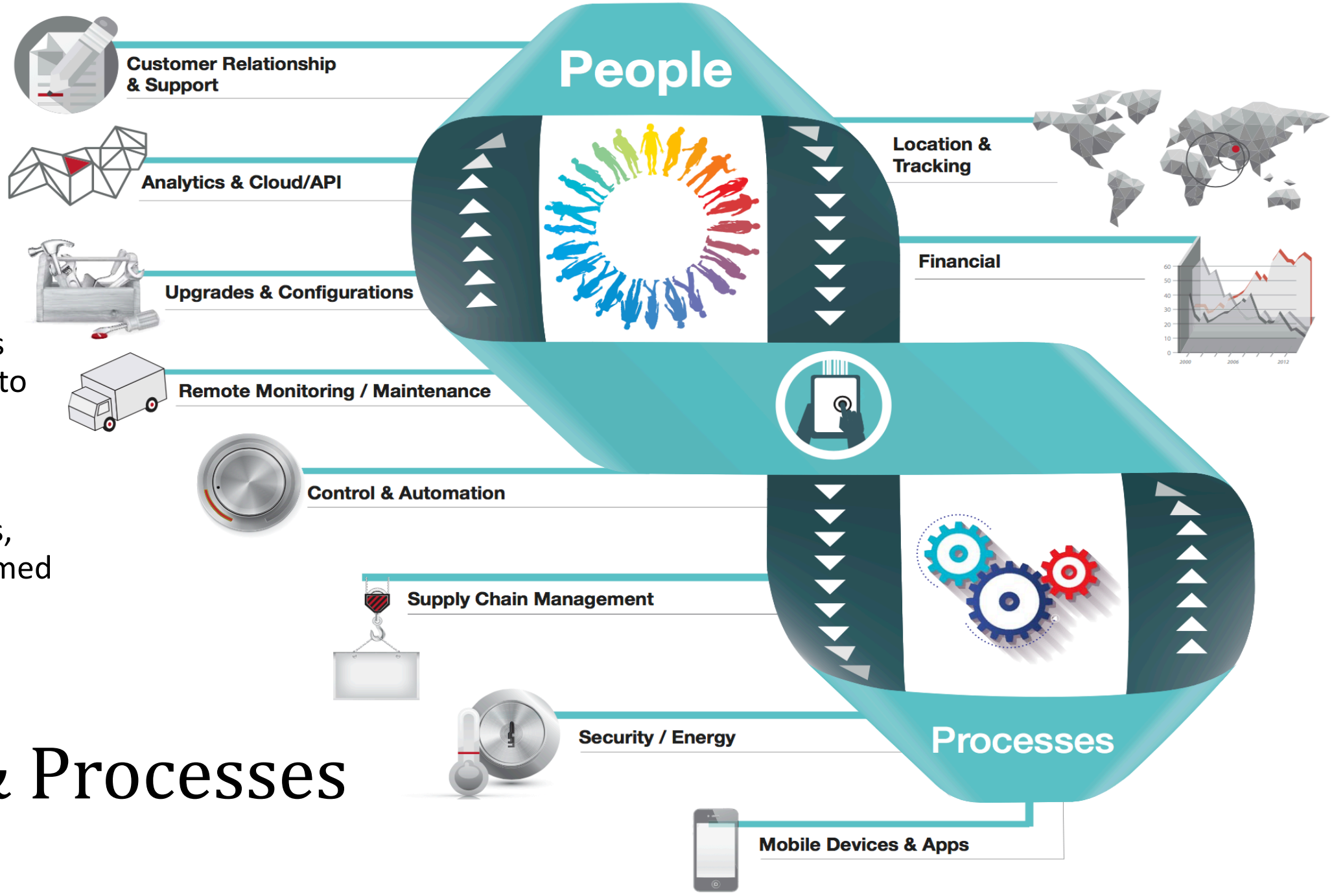
Connectivity

- Ubiquity of versatile wired/wireless technologies
- Allow for digitization of inputs for communication over heterogeneous networks

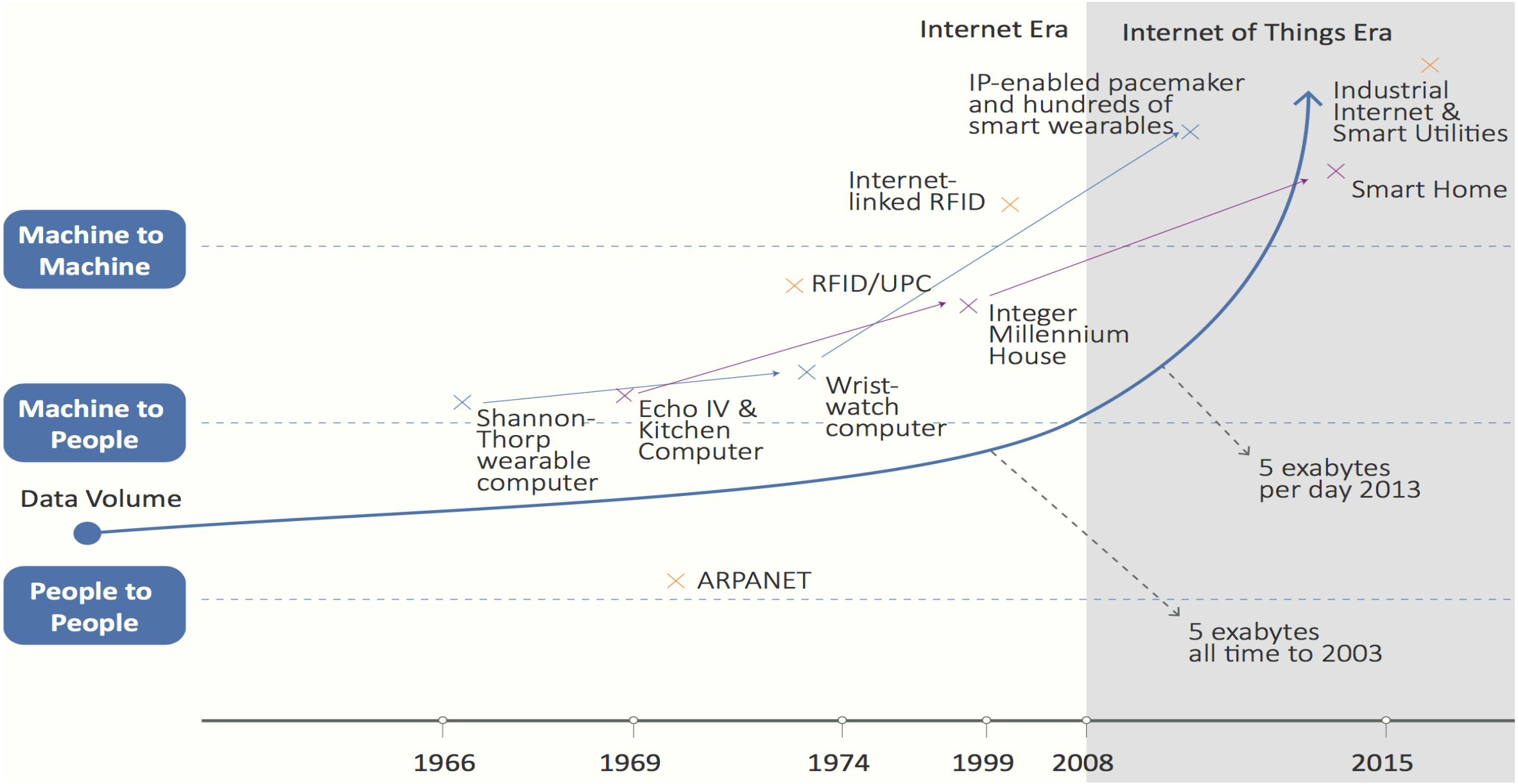


People & Processes

- Networked inputs are aggregated into duplex systems capable of integrating Data, People, Processes, Systems for informed Decision making



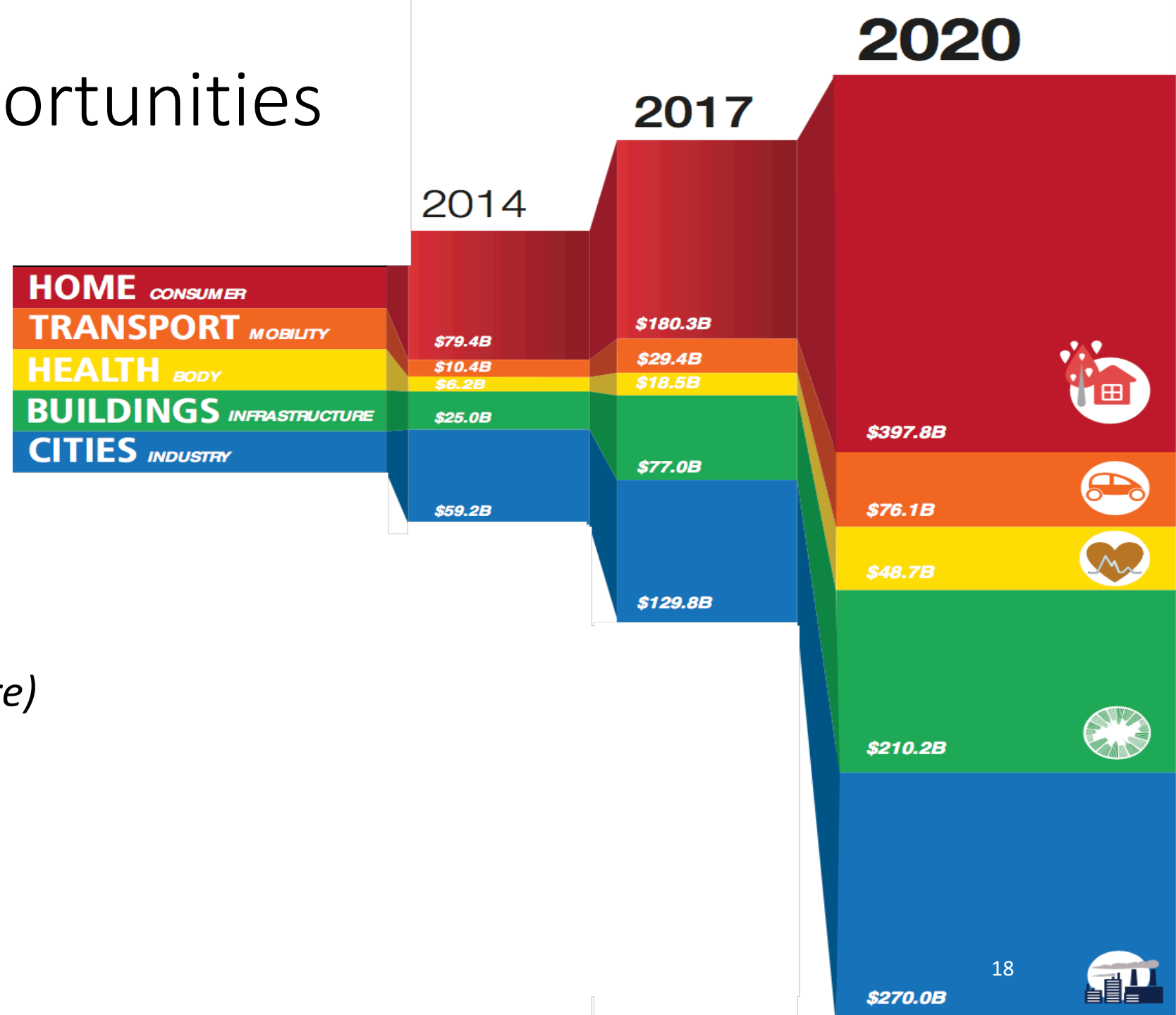
IoT: From People-to-People To Machine-to-Machine



Source: ITU.

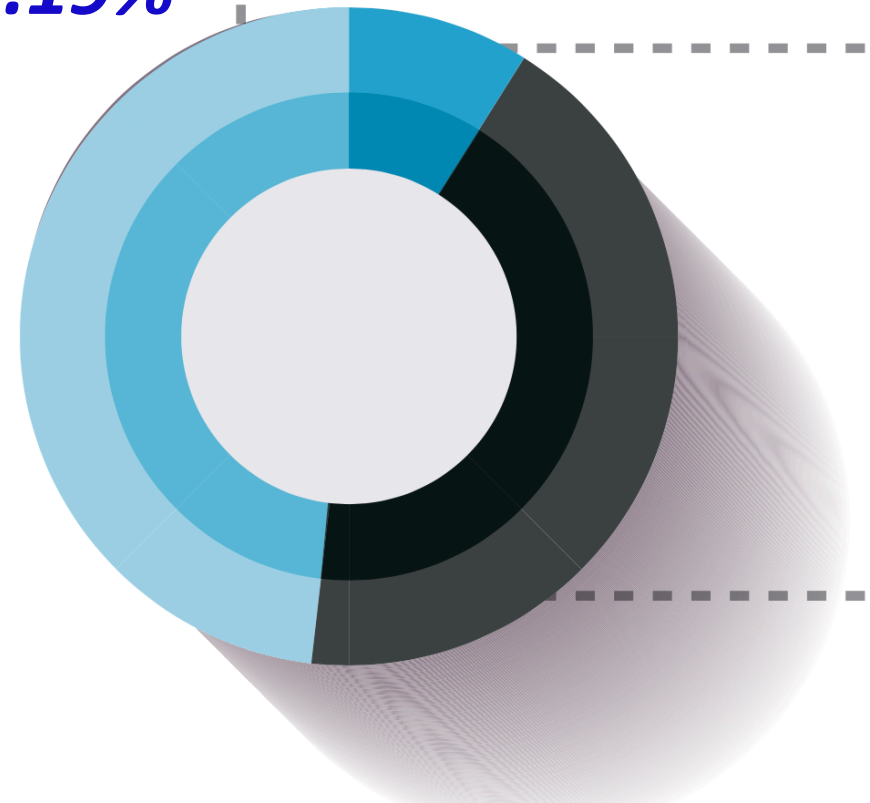
IoT Revenue Opportunities

- Growth is across board
- Growth rate differs
- Highest Gainers:
  - **Home** (*Consumer)*
  - **Cities** (*Industry*)
- Lowest Gainers:
  - **Health** *(Body*)
  - **Buildings** *(Infrastructure)*



180+ Billion in Revenue in 2014

*Software-based Services account for **48.19%***



Managed Services

$86,919.93 (USD millions)

Data and Analytics
Systems Applications
Mobile and Cloud Computing
Value Added Application Services

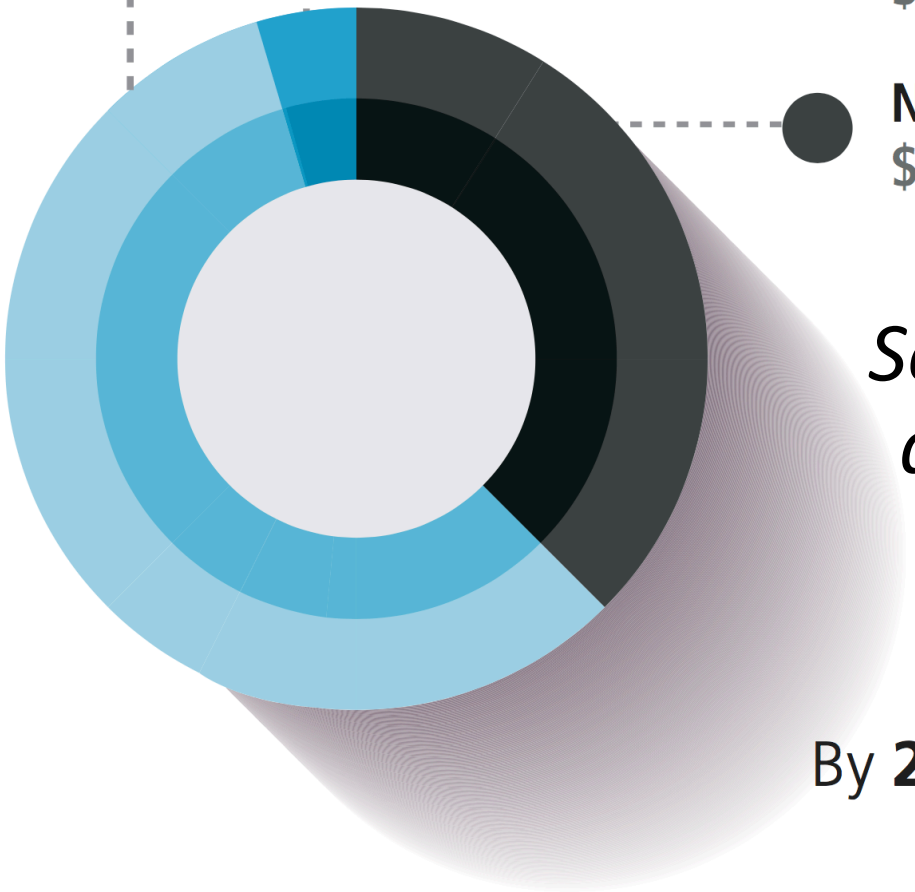
Enablement Hardware

$16,186.42 (USD millions)

Wireline or wireless module attached to or embedded in each machine to be connected.

Network Services

$77,273.55 (USD millions)

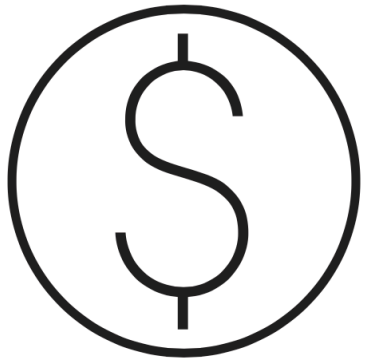


Managed Services
$571,845.77 (USD millions)

Enablement Hardware
$43,782.24 (USD millions)

Network Services
$387,453.46 (USD millions)

*Software will account for ~**49%***



By **2020** this opportunity will grow to more than

>$1 Trillion

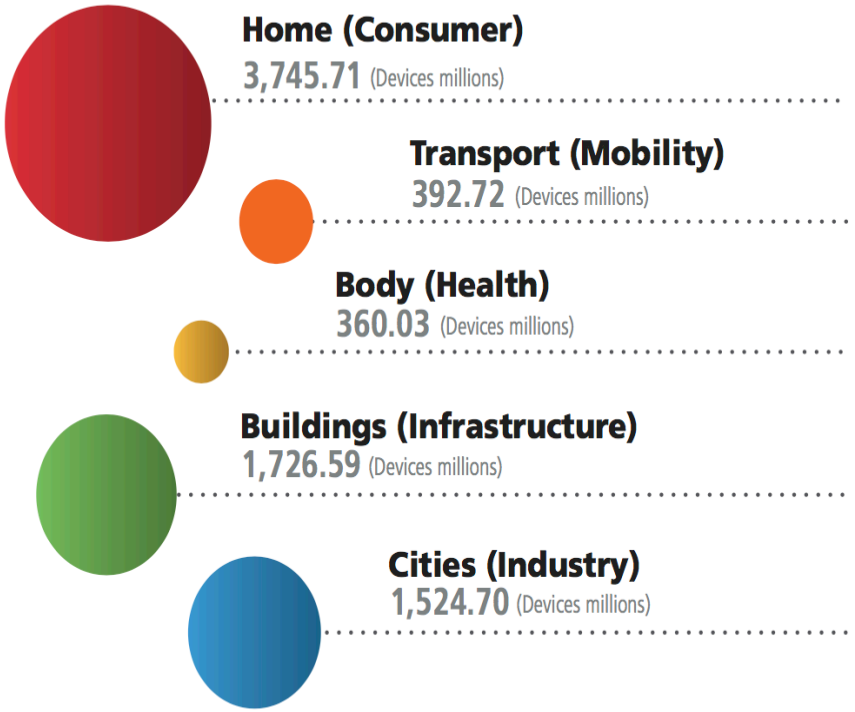
Connected Devices

Home	*3,746m*
Transport	*393m*
Body	*360m*
Buildings	*1,727m*
Cities	*1,525m*

In 2014 nearly **2 billion** connected devices

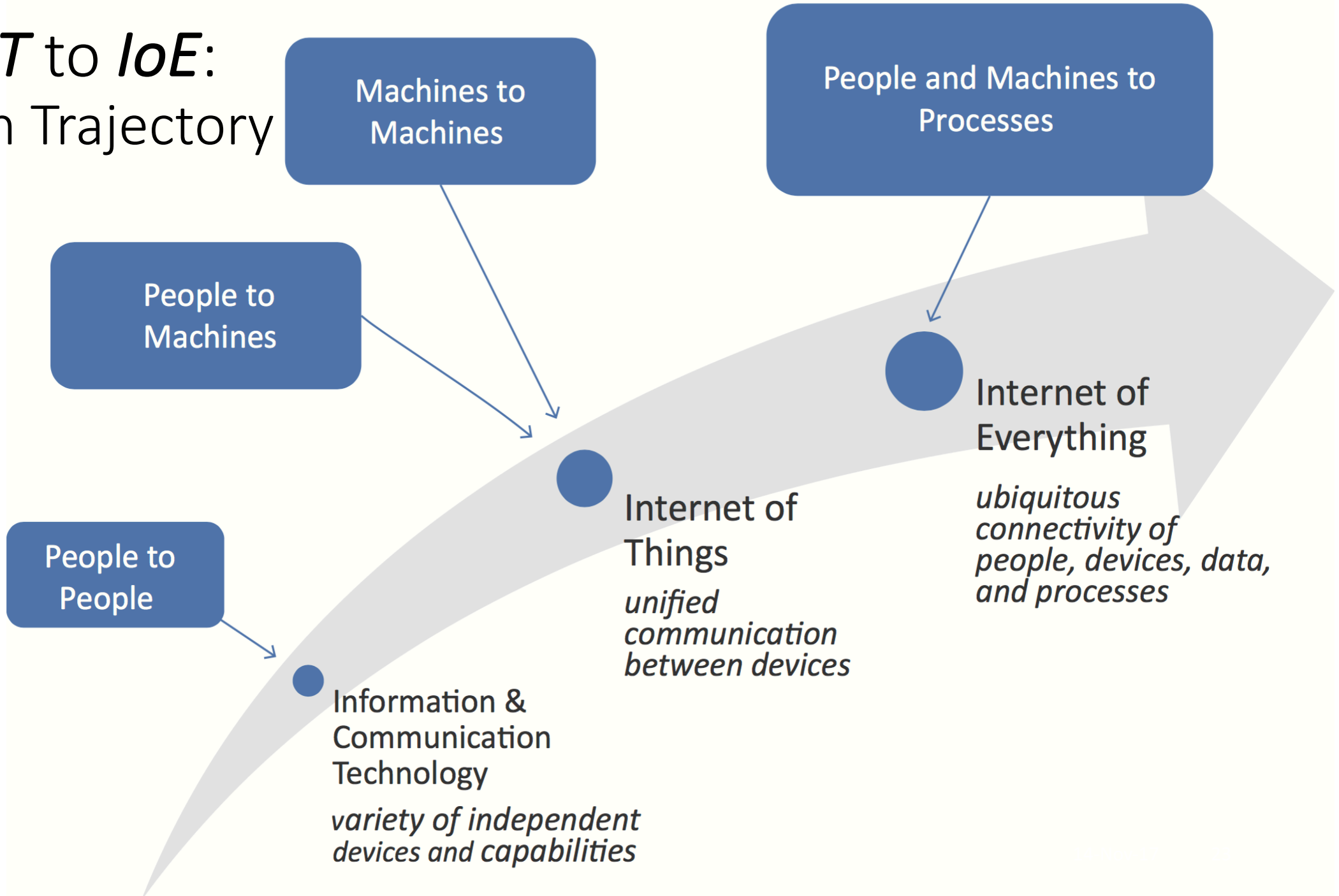
This number will grow to nearly **8 billion** devices for the year 2020

**Not including mobile phones*



The **Internet** gave us the opportunity to connect in ways we could never have dreamed possible.
The **Internet of Things** will take us beyond connection to become part of a living, moving, **global nervous system**.

From *IoT* to *IoE*: Evolution Trajectory



IoT Maturity and Adoption

- The world is still in the early stages of IoT adoption.
- The impact of IoT in developing countries is still relatively low, when compared to developed world, due to the following issues:
  - Limited broadband Internet access coverage;
  - Power requirements, reliability and durability;
  - Policy considerations concerning access to data, legacy regulatory models, standards, interoperability, security, and privacy.

IBIMA Publishing
Journal of South African Business Research
http://www.ibimapublishing.com/journals/JSABR/jsabr.html
Vol. 2016 (2016), Article ID 321563,13 pages
DOI: 10.5171/2016.321563

Research Article

An Assessment of the Internet of Things (IoT) Adoption Readiness of Sub-Saharan Africa

Aderemi A. Atayero, Stephen O. Oluwatobi and Philip O. Alege

Covenant University, Ota, Ogun State, Nigeria

Abstract

A new and fast emerging shift in networking and communications is the Internet of Things. This new connectivity paradigm (according to industry and academic analysts) is expected to fully mature by the year 2020. A number of industry giants have already created platforms both for production and deployment of devices, processes and services aimed at maximizing the opportunities accruable from this new development. The developing economies of Sub-Saharan Africa (SSA) have a unique opportunity to join in the Internet of Things race at the developmental stage. Their ability to maximize the benefits of this early participation in a novel technological trend will, however, be determined by their level of preparedness both technologically and policy wise. A measure of the readiness of Sub-Saharan African states for the adoption of the IoTs becomes of imperative importance. We present, in this study, a preliminary assessment of the preparedness of SSA economies for the adoption of the IoTs as a background for a more detailed work on a proposed index (*@-IoT Index*) for measuring in quantitative terms the preparedness level of States for IoT adoption.

Keywords: Assessment; Internet of Things; Sub-Saharan Africa

IoT Maturity and Adoption

Conclusion

This study has helped to assess the IoT adoption readiness of SSA using NRI, IDI, GII, GCI and KEI. This was done by examining the top ten performing countries in SSA in relation to the top ten in other regions for each of the indices. Overall, the SSA region is seen to be lagging behind in all the indices used except for GII. It is also observed that Nigeria, which is reputed to be the largest economy and the most populous in the region, did not feature among the top ten performing countries in SSA for all the indices employed in this study. This clearly indicates that the region demands strong institutions that can drive the increase in high level human capital, installation of adequate ICT infrastructure, innovations that facilitate the delivery of affordable services and a market that promotes competitiveness.

Table 1: Top 10 Network Ready Countries per Region

SSA			MENA			EDA			LAC			AE		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
45	Mauritius	4.5	23	UAE	5.3	32	Malaysia	4.9	38	Chile	4.6	1	Singapore	6
74	Seychelles	4.0	27	Qatar	5.1	61	Mongolia	4.2	39	Barbados	4.6	2	Finland	6
75	South Africa	4.0	30	Bahrain	4.9	62	China	4.2	46	Uruguay	4.5	3	Sweden	5.8
83	Rwanda	3.9	35	Saudi Arabia	4.7	65	Sri Lanka	4.1	49	Costa Rica	4.4	4	Netherlands	5.8
86	Kenya	3.8	42	Oman	4.5	67	Thailand	4	51	Panama	4.4	5	Norway	5.8
87	Cape Verde	3.8	52	Jordan	4.3	76	Philippines	4	64	Colombia	4.1	6	Switzerland	5.7
101	Ghana	3.5	72	Kuwait	4	79	Indonesia	3.9	69	Mexico	4	7	United States	5.6
102	Namibia	3.5	78	Morocco	3.9	85	Vietnam	3.9	70	Trinidad and Tobago	4	8	United Kingdom	5.6
104	Botswana	3.4	81	Tunisia	3.9	88	Bhutan	3.7	80	El Salvador	3.9	9	Luxembourg	5.6
106	Senegal	3.3	94	Egypt	3.6	89	India	3.7	82	Jamaica	3.9	10	Japan	5.6
AVERAGE		**3.8**	**AVERAGE**		**4.4**	**AVERAGE**		**4.1**	**AVERAGE**		**4.2**	**AVERAGE**		**5.8**

Source: World Economic Forum (2015). Network Readiness Index
Note: "Average" connotes the average of the top ten per region.
SSA: Sub-Saharan Africa
MENA: Middle East and North Africa
EDA: Emerging and Developing Asia
LAC: Latin America and the Caribbean
AE: Advanced Economies

Table 2: Top 10 ICT Developed Countries per Region

SSA			MENA			A&P			CIS			The Americas			Europe		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
70	Mauritius	5.22	27	Bahrain	7.40	2	South Korea	8.85	38	Belarus	6.89	14	United States	8.02	1	Denmark	8.86
75	Seychelles	4.97	32	UAE	7.03	9	Hong Kong, China	8.28	42	Russia Fed.	6.70	23	Canada	7.62	3	Sweden	8.67
90	South Africa	4.42	34	Qatar	7.01	11	Japan	8.22	53	Kazakhstan	6.08	35	Barbados	6.95	4	Iceland	8.64
93	Cape Verde	4.30	47	Saudi Arabia	6.36	12	Australia	8.18	61	Moldova	5.72	48	Uruguay	6.32	5	United Kingdom	8.50
104	Botswana	4.01	52	Oman	6.1	16	Singapore	7.90	64	Azerbaijan	5.65	54	St. Kitts and Nevis	6.01	6	Norway	8.39
113	Ghana	3.46	62	Lebanon	5.71	19	New Zealand	7.82	73	Ukraine	5.15	55	Costa Rica	5.92	7	Netherlands	8.38
117	Namibia	3.24	87	Jordan	4.62	22	Macao, China	7.66	74	Armenia	5.08	56	Chile	5.92	8	Finland	8.31
121	Zimbabwe	2.89	89	Egypt	4.45	66	Brunei Darussalam	5.43	78	Georgia	4.86	57	Antigua & Barbuda	5.89	10	Luxembourg	8.26
124	Kenya	2.79	96	Morocco	4.27	71	Malaysia	5.20	108	Kyrgyzstan	3.78	59	Argentina	5.8	13	Switzerland	8.11
126	Gabon	2.66	99	Tunisia	4.23	81	Thailand	4.76	115	Uzbekistan	3.40	65	Brazil	5.5	15	Monaco	7.93
AVERAGE		**3.80**	**AVERAGE**		**5.72**	**AVERAGE**		**7.23**	**AVERAGE**		**5.33**	**AVERAGE**		**6.40**	**AVERAGE**		**8.41**

Source: International Telecommunication Union (2014). ICT Development Index
Note: "Average" connotes the average of the top ten per region.
SSA: Sub-Saharan Africa
MENA: Middle East and North Africa
A&P: Asia and the Pacific
CIS: Commonwealth of Independent States

Table 3: Top 10 Innovative Countries per Region

SSA			SEA			CSA			Europe			The Americas		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
49	Mauritius	3.92	7	Singapore	5.94	61	Armenia	3.73	1	Switzerland	6.8	5	United States	6.0
60	South Africa	3.75	11	Hong Kong (China)	5.72	73	Georgia	3.38	2	United Kingdom	6.2	16	Canada	5.6
65	Seychelles	3.64	14	South Korea	5.63	81	India	3.17	3	Sweden	6.2	37	Barbados	4.2
84	Senegal	3.10	15	New Zealand	5.59	82	Kazakhstan	3.13	4	Netherland	6.2	42	Chile	4.1
90	Botswana	3.05	17	Australia	5.52	85	Sri Lanka	3.08	6	Finland	6.0	51	Costa Rica	3.9
92	Kenya	3.02	19	Japan	5.40	106	Iran	2.84	8	Ireland	5.9	57	Mexico	3.8
94	Rwanda	3.01	29	China	4.75	109	Kyrgyzstan	2.80	9	Luxembourg	5.9	62	Panama	3.7
95	Mozambique	3.01	32	Malaysia	4.60	114	Tajikistan	2.75	10	Denmark	5.8	67	Colombia	3.6
98	Malawi	2.97	52	Vietnam	3.84	121	Bhutan	2.61	12	Germany	5.7	68	Uruguay	3.6
102	Burkina Faso	2.87	55	Thailand	3.81	122	Uzbekistan	2.59	13	Iceland	5.7	70	Brazil	3.5
AVERAGE		**3.23**	**AVERAGE**		**5.08**	**AVERAGE**		**2.91**	**AVERAGE**		**6.00**	**AVERAGE**		**4.20**

Source: Cornell University, INSEAD and World Intellectual Property Organization (2015). The Global Innovation Index
Note: "Average" connotes the average of the top ten per region.
SSA: Sub-Saharan Africa
SEA: South East Asia
CSA: Central and Southern Asia

Table 4: Top 10 Competitive Economies per Region

SSA			MENA			A&P			CIS			The Americas			Europe		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
39	Mauritius	6.46	12	UAE	7.61	2	Singapore	8.07	38	Azerbaijan	6.47	3	United States	7.91	1	Switzerland	8.14
56	South Africa	6.21	16	Qatar	7.49	6	Japan	7.81	50	Kazakhstan	6.31	15	Canada	7.49	4	Finland	7.86
62	Rwanda	6.10	24	Saudi Arabia	7.23	7	Hong Kong	7.80	53	Russia Fed	6.24	32	Puerto Rico	6.63	5	Germany	7.84
74	Botswana	5.93	27	Israel	7.07	14	Taiwan, China	7.50	69	Georgia	6.03	33	Chile	6.57	8	Netherlands	7.79
88	Namibia	5.66	40	Kuwait	6.44	17	New Zealand	7.43	76	Ukraine	5.91	51	Costa Rica	6.31	9	United Kingdom	7.73
90	Kenya	5.61	44	Bahrain	6.40	20	Malaysia	7.37	82	Moldova	5.76	55	Barbados	6.23	10	Sweden	7.73
92	Seychelles	5.59	46	Oman	6.37	22	Australia	7.26	85	Armenia	5.73	57	Brazil	6.20	11	Norway	7.64
96	Zambia	5.51	64	Jordan	6.07	26	South Korea	7.09	91	Tajikistan	5.61	61	Mexico	6.10	13	Denmark	7.56
106	Gabon	5.34	72	Morocco	6.01	28	China	6.99	108	Kyrgyzstan	5.33	65	Peru	6.06	18	Belgium	7.40
107	Lesotho	5.33	79	Algeria	5.83	31	Thailand	6.66				66	Colombia	6.04	19	Luxembourg	7.39
AVERAGE		**5.77**	**AVERAGE**		**6.65**	**AVERAGE**		**7.40**	**AVERAGE**		**5.93**	**AVERAGE**		**6.55**	**AVERAGE**		**7.71**

Source: World Economic Forum (2014). Global Competitive Index
Note: "Average" connotes the average of the top ten per region.
SSA: Sub-Saharan Africa
MENA: Middle East and North Africa
A&P: Asia and the Pacific
CIS: Commonwealth of Independent States

Table 5: Top 10 Knowledge Driven Economies per Region

SSA			MENA			A&P			Europe			The Americas		
Rank	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**	**Rank**	**Country**	**Score**
62	Mauritius	5.52	25	Israel	8.14	6	New Zealand	8.97	1	Sweden	9.43	7	Canada	8.92
67	South Africa	5.21	42	UAE	6.94	9	Australia	8.88	2	Finland	9.33	12	United States	8.77
85	Botswana	4.31	43	Bahrain	6.9	13	Taiwan, China	8.77	3	Denmark	9.16	40	Chile	7.21
89	Namibia	4.1	47	Oman	6.14	18	Hong Kong, China	8.52	4	Netherlands	9.11	41	Barbados	7.18
103	Cape Verde	3.59	50	Saudi Arabia	5.96	22	Japan	8.28	5	Norway	9.11	46	Uruguay	6.39
107	Swaziland	3.13	54	Qatar	5.84	23	Singapore	8.26	8	Germany	8.9	51	Costa Rica	5.93
111	Kenya	2.88	64	Kuwait	5.33	29	South Korea	7.97	10	Switzerland	8.87	52	Trinidad and Tobago	5.91
113	Ghana	2.72	75	Jordan	4.95	48	Malaysia	6.1	11	Ireland	8.86	53	Aruba	5.89
114	Senegal	2.7	80	Tunisia	4.56	55	Russian Fed.	5.78	14	United Kingdom	8.76	58	Jamaica	5.65
116	Zambia	2.56	94	Iran	3.91	56	Ukraine	5.73	15	Belgium	8.71	60	Brazil	5.58
AVERAGE		**3.67**	**AVERAGE**		**5.87**	**AVERAGE**		**7.73**	**AVERAGE**		**9.02**	**AVERAGE**		**6.74**

Source: World Bank (2012). Knowledge Economy Index
Note: "Average" connotes the average of the top ten per region.
SSA: Sub-Saharan Africa
MENA: Middle East and North Africa
A&P: Asia and the Pacific

Big Data Analytics

Big Data Analytics

- What is Big Data?
  - Big Data refers to ***extremely large datasets*** that may be ***analyzed computationally*** to reveal:
    - Patterns;
    - Trends; and
    - Associations.

Characteristics of Big Data: *The 3Vs*

Volume	Large volumes of digital data are generated continuously from millions of devices and applications (ICTs, smartphones, products' codes, social networks, sensors, logs, etc.).
Velocity	Data are generated in a fast way and should be processed rapidly to extract useful information and relevant insights.
Variety	Big Data are generated from distributed sources and in multiple formats (e.g., videos, documents, comments, logs).

Statistics on Global Data Generated & Stored in Electronic Format

Data generated		
Indicator	**Statistics**	**Source**
Total data generated:	From the dawn of civilization to 2003, humanity has generated 5 exabytes (EB) of data	Intel (2013)
Data structure:	85% of big data is unstructured	Berry (2012)
Genomic data per person:	4 terabytes (TB)	Miller (2012)
Data generated by Boeing jet engine per 30 minutes of flight:	10 TB	Higginbotham (2010)
Data generated by automobile per hour of driving:	25 gigabyte (GB)	Taveira (2014)
Data increase in electrical utilities due to IoT-enabled smart grid:	680 million smart meters will be installed globally by 2017. This will lead to 280 petabytes (PB) of data per year.	Bloomberg (2015)

Data in Electronic Format

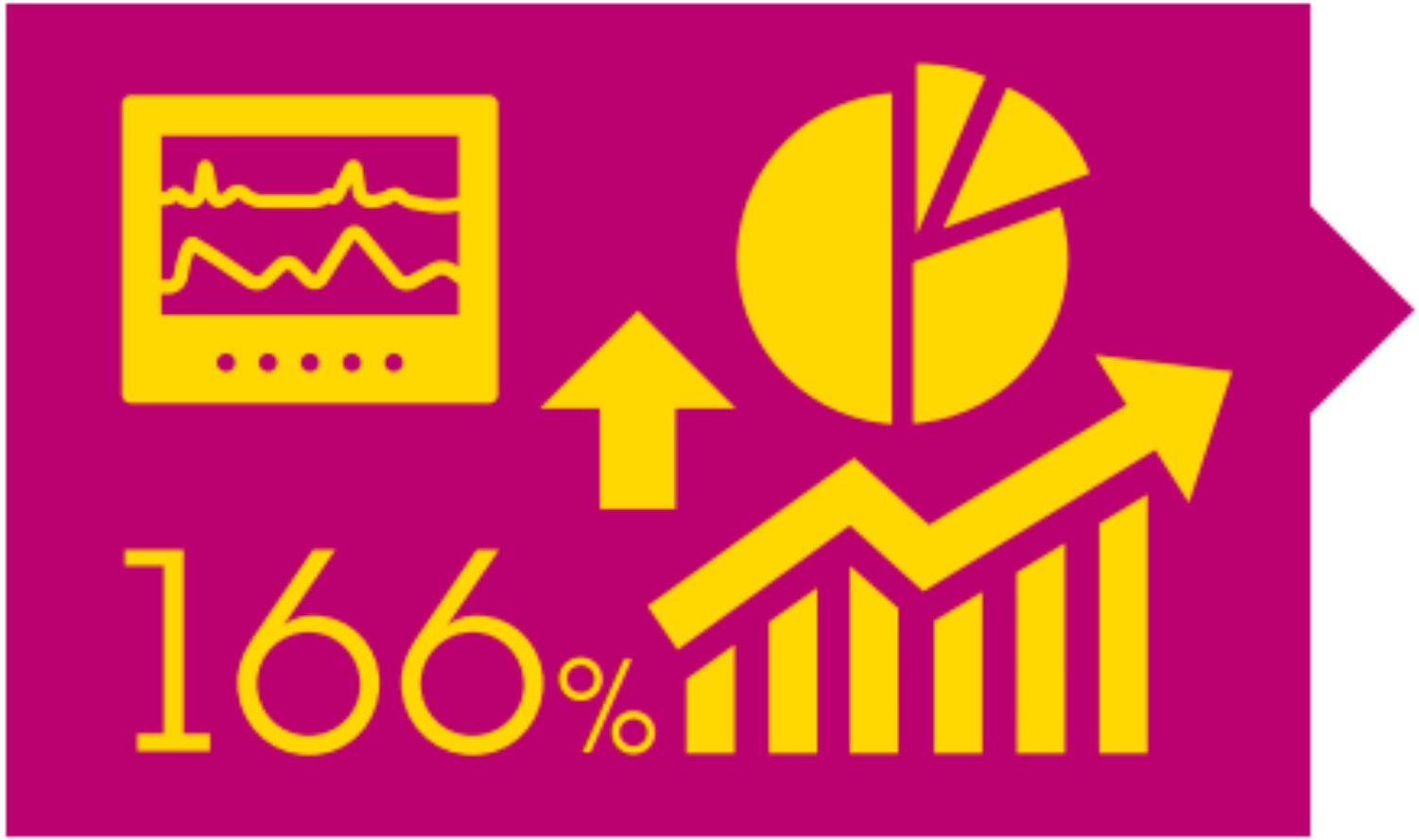
Data in electronic format		
Statistics		**Source**
The volume of data stored in electronic format has been doubling almost every 18 months.		Gantz (2011)
2013	3.1 zettabytes (ZB) data centre traffic	Cisco (2014)
	4.4 ZB (trillion gigagbytes) total	Gantz (2011)
	5 GB per capita	Bahrami (2015)
2014	2.5 billion GB per day; 1.7 megabytes (MB) per minute per capita	Gantz (2011)
2015	14.5 billion indexed webpages	Woollaston (2013)
2016	1 ZB global annual IP traffic	Cisco (2015)
2018	403 ZB total IoE traffic	Cisco (2014)
	14 GB per capita	Bahrami (2015)
2019	2 ZB global annual IP traffic	Cisco (2015a)
2020	44 ZB (44 trillion GB)	Gantz (2011)
	10% from embedded IoT devices	Gantz (2011)
	27% from mobile connected things	Gantz (2011)

Note: data volumes are expressed in multiples of bytes: kilobyte (1024), megabyte (1024^2), gigabyte (1024^3), terabyte (1024^4), petabyte (1024^5), exabyte (1024^6) and zettabyte (1024^7).

Big Data Analytics

- Companies and industries are more aware that data analysis is increasingly becoming a vital factor to:
  - ***automate*** processes;
  - be ***competitive***;
  - discover ***new insight***; and
  - ***personalize*** services.

Big Data Analytics



Leaders are **166%** more likely to make most decisions based on data[3]

How Companies Harness the Potentials of Big Data Analytics

Amazon, the online retail giant, exploits her access to a massive amount of data on its customers for ***personalized marketing*** and to ***improve customer relations***.

American Express employs sophisticated predictive models to ***analyze and predict consumer behavior*** based on historical transactions.

T-Mobile, a mobile network, combines customer transaction and interactions data to ***predict customer fluctuations***.

How Companies Harness the Potentials of Big Data Analytics

1

General Electric uses the data from sensors on machinery like gas turbines and jet engines to identify ways to ***improve working processes*** and ***reliability***.

2

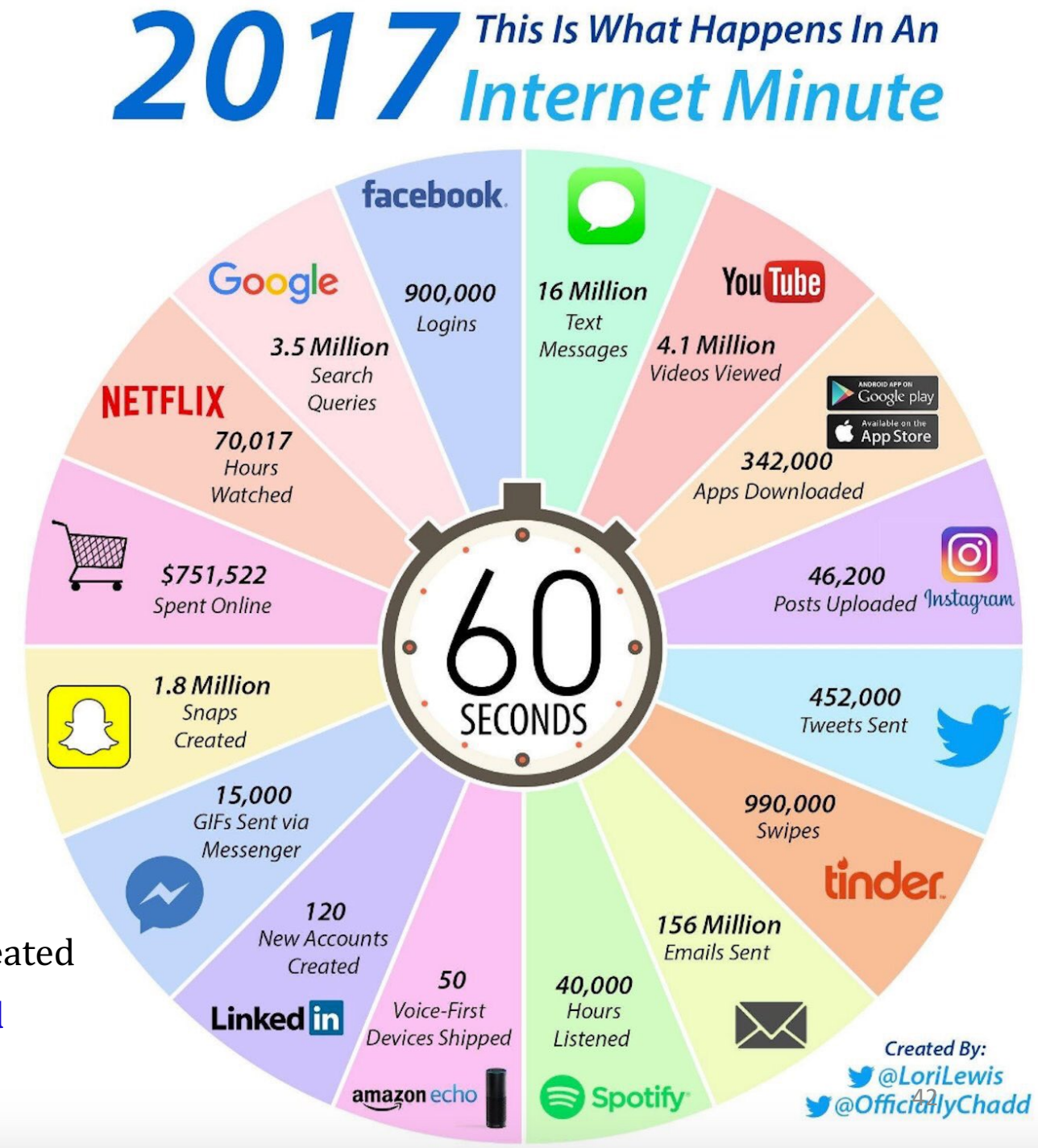
Miniclip, who develop, publish and distribute digital games globally, use big data to ***monitor and improve user experience***.

3

The entertainment streaming service of ***Netflix*** has a wealth of data and analytics providing insight into the ***viewing habits*** of millions of international consumers.

Social Media Experience

- 156m **Emails** sent
- 16m **Text** Messages sent
- 4.1m YouTube **videos** viewed
- 3.5m Google **Search** Queries
- 1.8m **Snaps** Created
- 990k Tinder **Swipes**
- 900k Facebook **logins**
- 751.5k US Dollars **Spent** Online
- 452k **Tweets** sent
- 342k **Apps** Downloaded
- 150k **GIFs** Sent via Messenger
- 70k Hours **Watched** on Netflix
- 46.2k Instagram **Posts** uploaded
- 40k Spotify Hours **listened**
- 120 New LinkedIn **Accounts** Created
- 50 Voice-First Devices **Shipped**



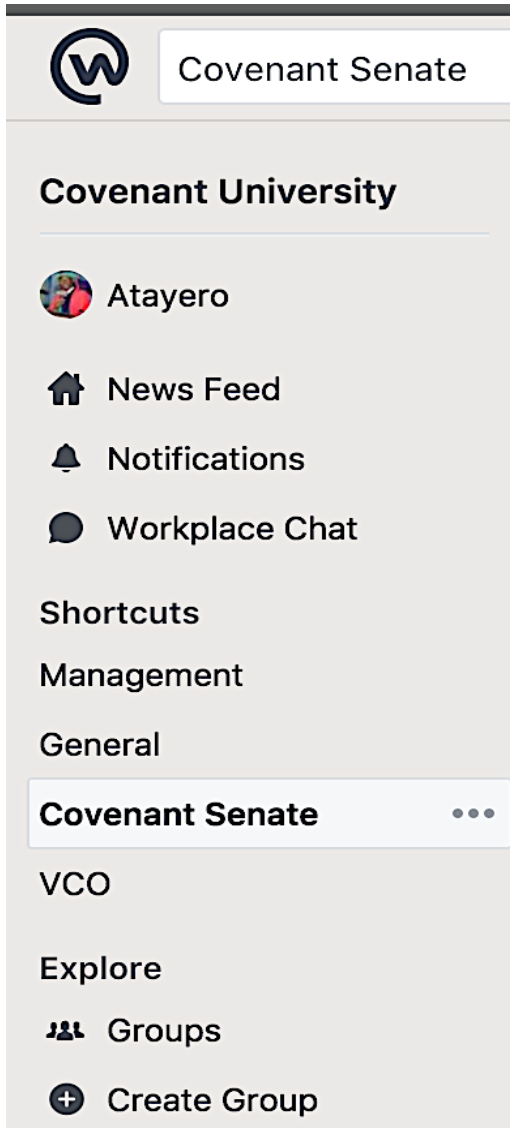
Social Media Experience

Drastic evolution of technology has altered how we perceive ***organizational leadership*** abilities and behaviors.

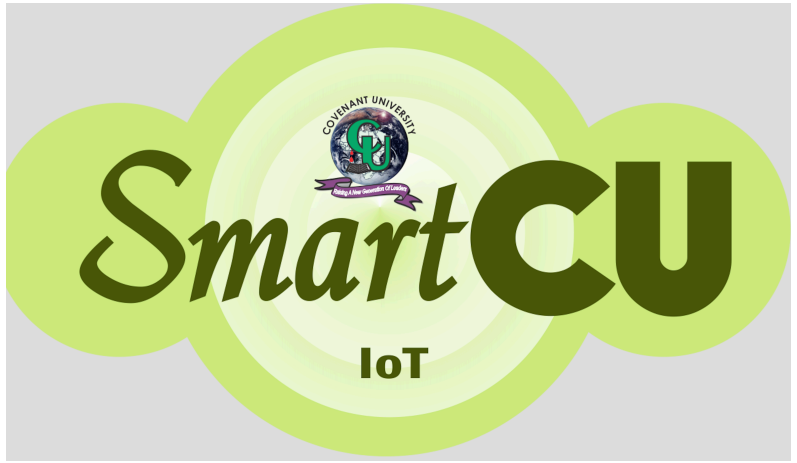
Unfortunately, the ***impact of social media on leadership*** still remains at a nascent stage.

Organizational leaders must consider the impact of ***new media adoption*** on an organization's effectiveness and operation.

Social Media Experience



- Leaders must adopt social media to engage with both internal and external audiences with a view of ***strengthening and leveraging relationships***.
- Linking social media adoption and leadership contributes to positive organizational outcomes such as:
  - *increased employee trust;*
  - *efficiency among virtual teams;*
  - *higher level of employee participation;*
  - *efficient knowledge sharing; and*
  - *improved relationships with external stakeholders.*

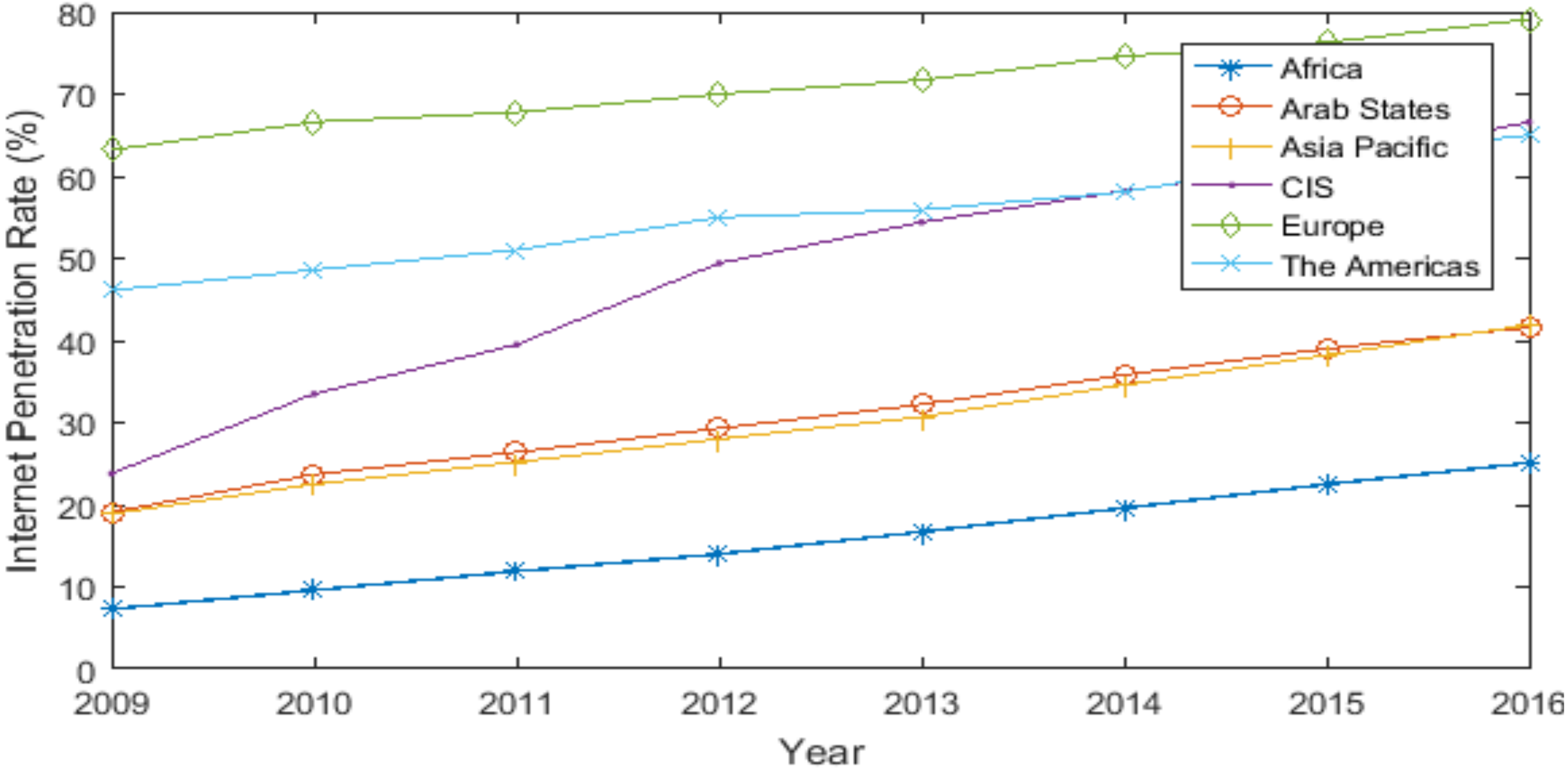


Digital Divide

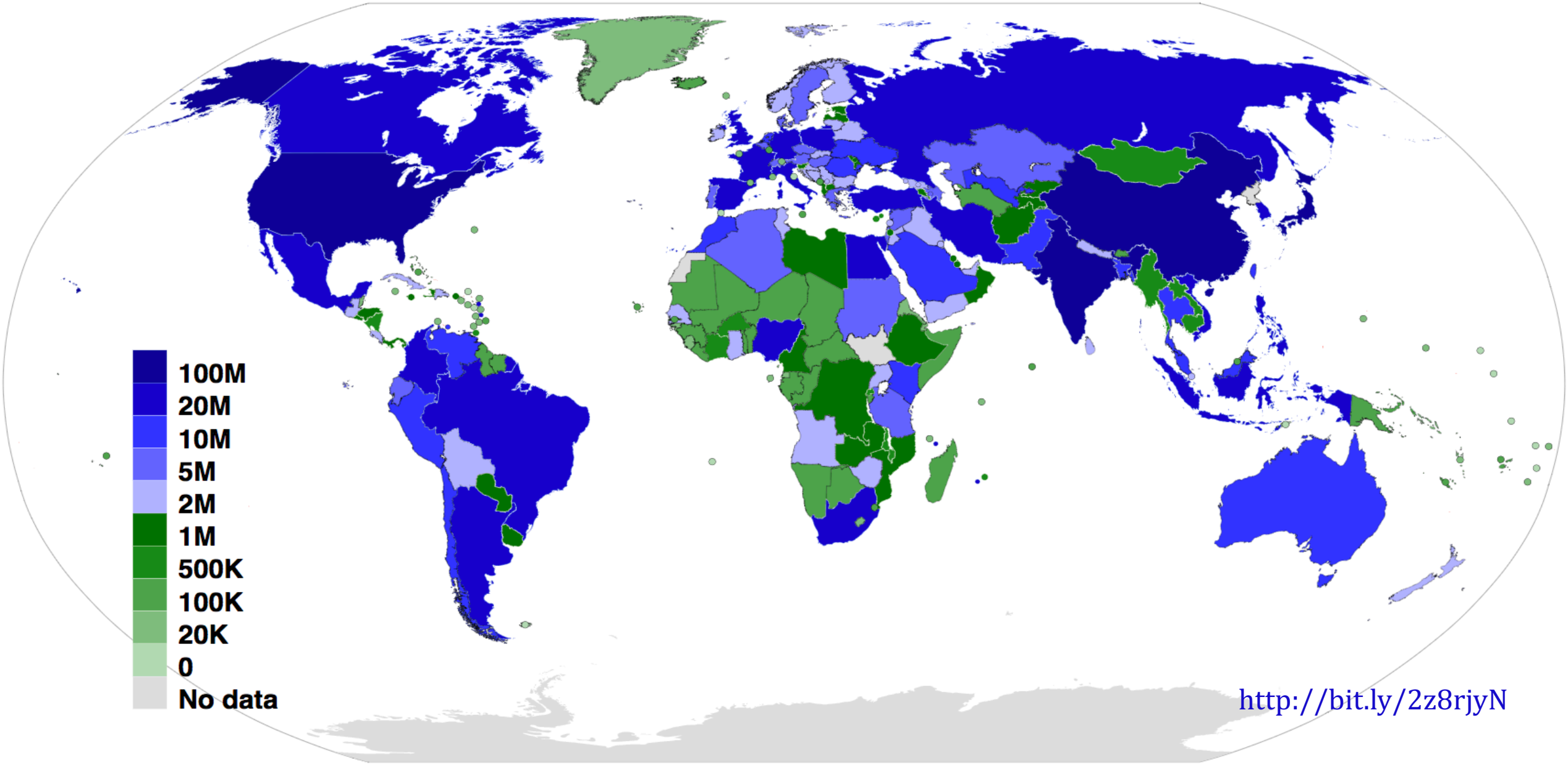
Digital Divide

- Digital divide is defined as:
  - ***inequality*** of access to the ***Internet***;
  - the gap between a group of people who have access to computers and the Internet and those who do not;
  - an inequality in access, distribution, and use of Information and Communication Technologies (ICTs) between two or more populations.

Digital Divide (World Bank Data, 2016)



Digital Divide (World Bank Data, 2016)



http://bit.ly/2z8rjyN

Digital Divide

- However, according to *Mun-cho* & Jong-Kil (2001), the digital divide is more than just an access problem, and can't be assuaged simply by providing the required equipment.
- Beyond ease of access to ICT infrastructure, it is imperative to know how to make use of the ICT infrastructure once available within a community.

The Demands of Leadership

- Today, the internet has created a Global Networked Business environment with limitless access to talent with critical digital innovative expertise.
- Savvy companies now encourage the staffing of persons with a desire for disrupting the status-quo, who can operate remotely with a distributed peer group of collaborators, with very minimal supervision.

The Demands of Leadership

- The implication of this revolution is that leaders and managers must keep abreast with the fast changing scope of ICT infrastructure, and applications to ensure they are not left behind by innovative and enterprising employees.

The Demand of Leadership

- It is also very necessary for leaders to stay updated with the current IT trends as this would ensure that they adequately utilize the skills, and talents of their staff/subordinates.

The Flat World & the Response of Leadership

- Leaders must adopt social media to engage with both internal and external audiences with a view of ***strengthening and leveraging relationships***.
- Linking social media adoption and leadership contributes to positive organizational outcomes such as:
  - *increased employee trust;*
  - *efficiency among virtual teams;*
  - *higher level of employee participation;*
  - *efficient knowledge sharing; and*
  - *improved relationships with external stakeholders.*

The Flat World & the Response of Leadership

- According to T. Friedman, for a variety of reasons, what economists call "barriers to entry" are being destroyed; today an individual or company anywhere can collaborate or compete globally.
- The world is very fast becoming a level playing field such that your presence online can make a stronger impact of the global plane that a geographical presence.

The Flat World & the Response of Leadership

- Bill Gates says, "*Today, I would rather be a genius born in China or India, than an average guy born in Poughkeepsie (a high-brow location in the New York, USA).*"
- The implication of the above statement simply extols the importance of IT skills today, portending a brighter future for a skilled genius in an emerging economy, than for an elite in a G8 nation.

The Response of Leadership

- Hierarchies are being eroded and playing fields levelled as new countries and peoples rise in importance and ambition
- are we conducting ourselves in a way that will spell success in this new atmosphere?
- As an institution we must accept the fact that the global playing field only supports a dynamically disruptive approach to leadership and innovation.
- Nothing normal will do anymore, it is either disruptive or it will be left behind.

The Leadership Mandate for Covenant University towards Vision 10:2022

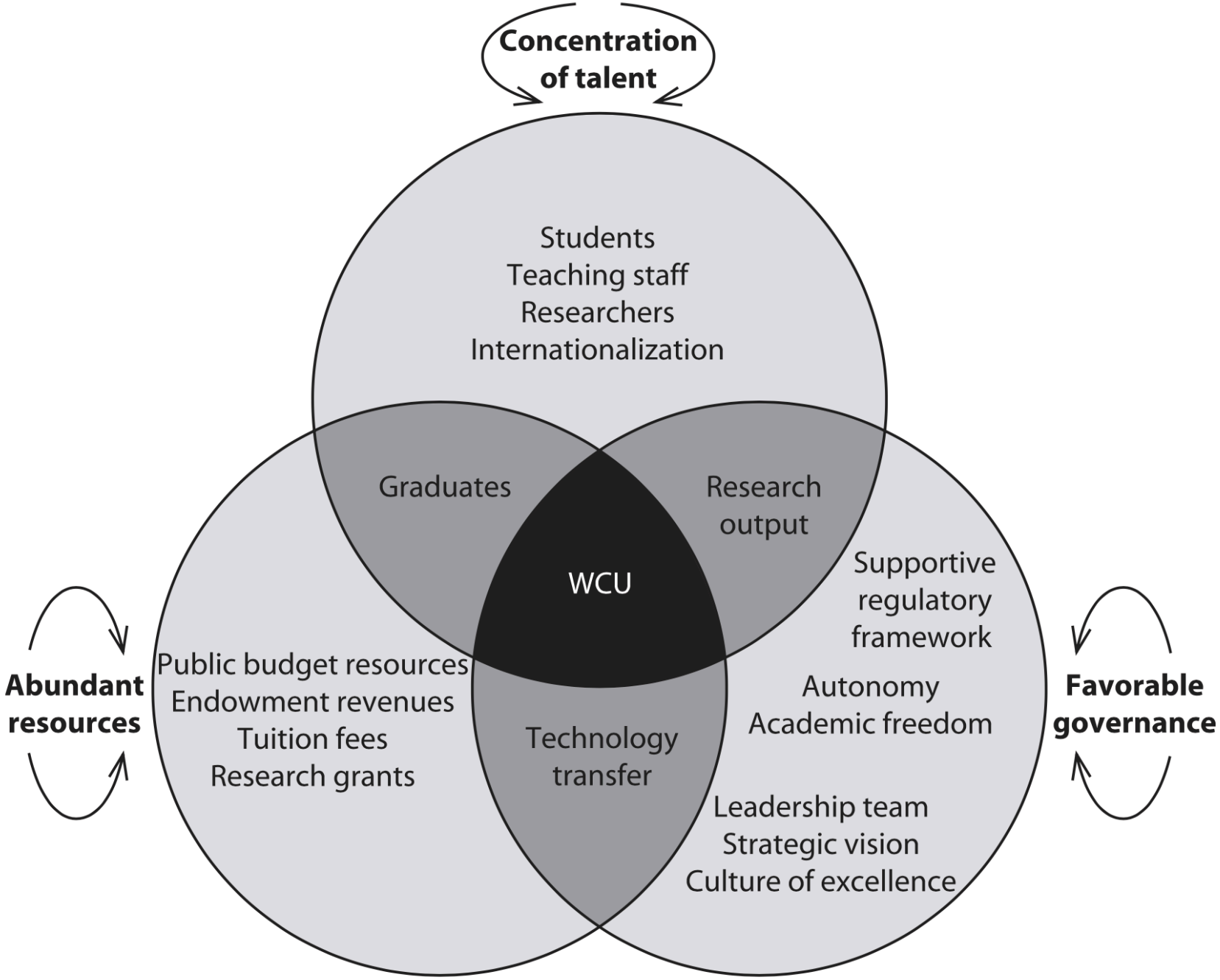
To be a leading World Class University, committed to raising a new generation of leaders in all fields of Human endeavour.

The Leadership Mandate for *Covenant* towards Vision 10:2022

Vision10:2022

To get Covenant University listed among the top 10 universities in the world within 10 years i.e. by 2022.

The Leadership Mandate for *Covenant* towards Vision 10:2022



Source: Created by Jamil Salmi.

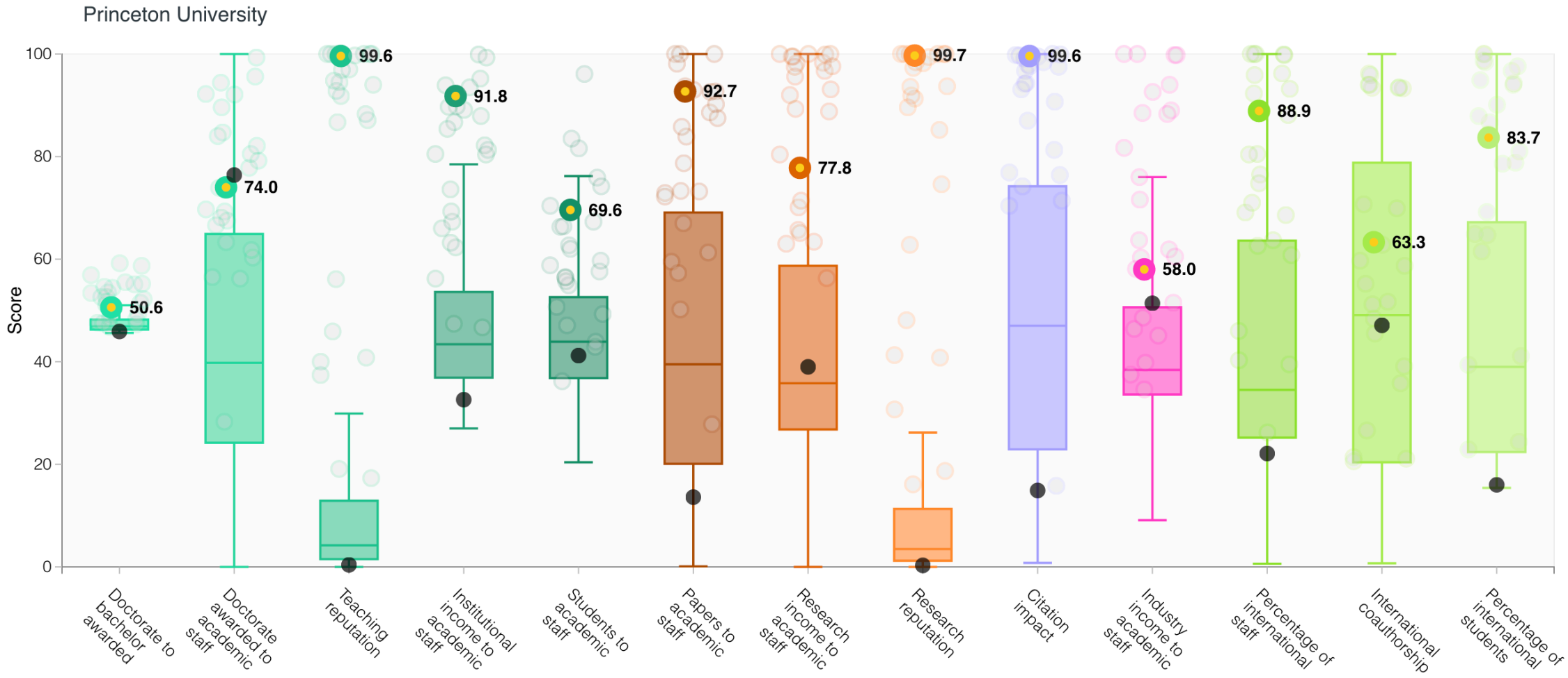
The Leadership Mandate for Covenant Towards Vision 10:2022

Covenant University

Rank
801–1000

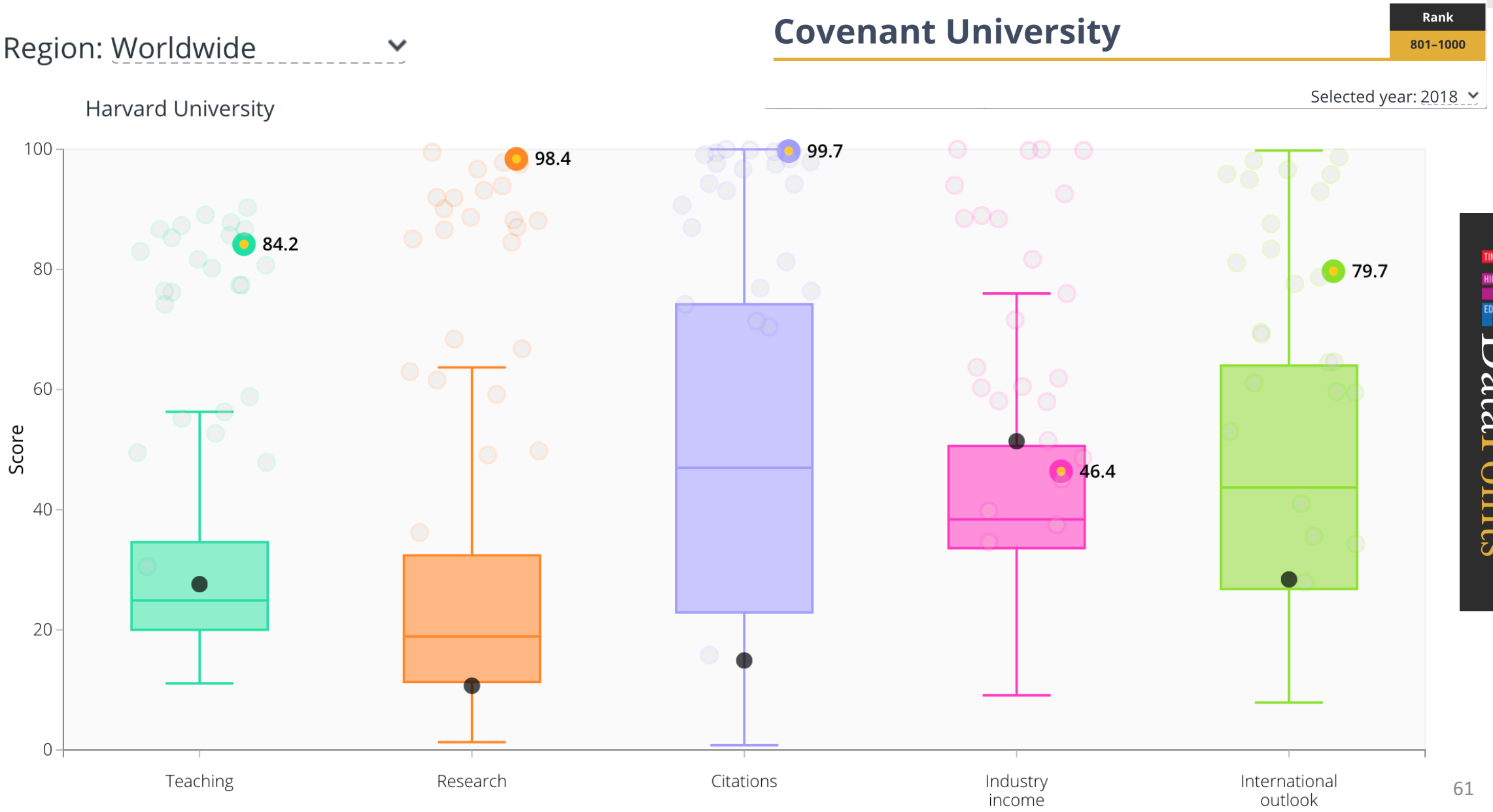
Region: Worldwide

Selected year: 2018



THE TIMES HIGHER EDUCATION DataPoints©

The Leadership Mandate for Covenant Towards Vision 10:2022



The Covenant *ReCITe* Agenda

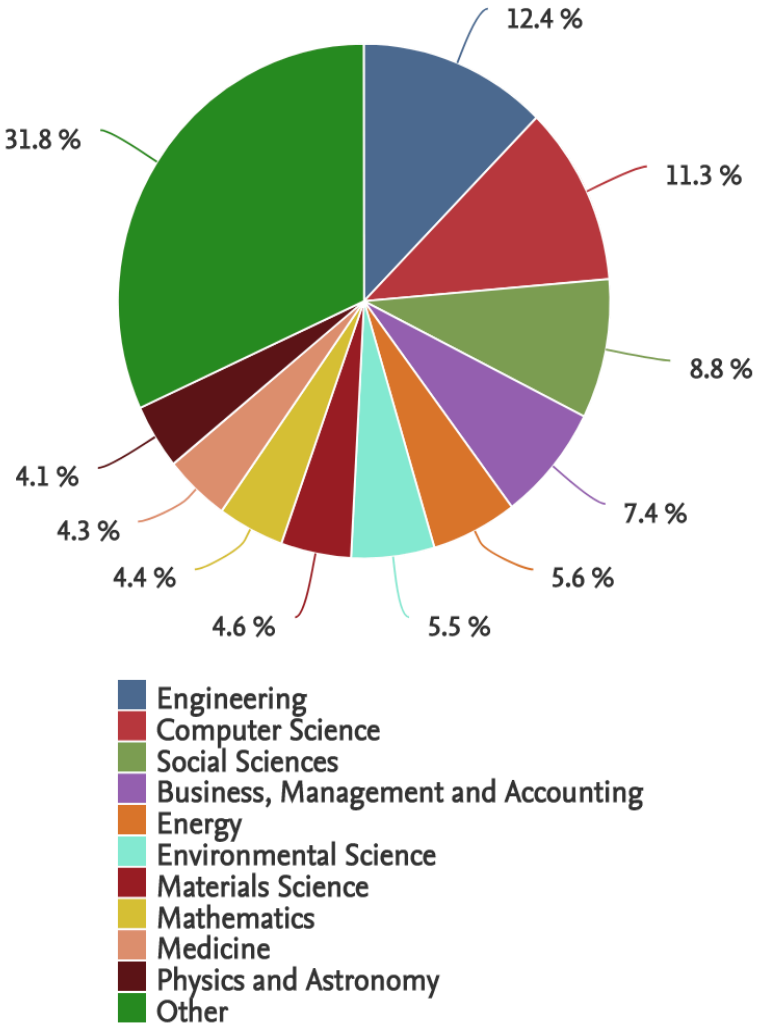
The Leadership Mandate for Covenant Towards Vision 10:2022

Documents by subject area | Collaborating affiliations | Documents by source

Sort by: Document count (high-low)

Engineering	417	Earth and Planetary Sciences	103
Computer Science	380	Decision Sciences	92
Social Sciences	296	Arts and Humanities	84
Business, Management and Accounting	248	Multidisciplinary	83
Energy	190	Pharmacology, Toxicology and Pharmaceutics	74
Environmental Science	184	Chemical Engineering	62
Materials Science	156	Immunology and Microbiology	36
Mathematics	147	Psychology	11
Medicine	144	Neuroscience	10
Physics and Astronomy	138	Health Professions	7
Agricultural and Biological Sciences	136	Nursing	7
Biochemistry, Genetics and Molecular Biology	127	Veterinary	2
Chemistry	126	Undefined	1
Economics, Econometrics and Finance	112		

Covenant University



Nigeria

The Leadership Mandate for Covenant Towards Vision 10:2022

2012 to >2017 | Engineering | ASJC | Data sources

Summary | Topics | Awarded Grants | Published | Viewed | Cited | Economic Impact | Authors | Institutions

Institutions in Nigeria

+ Add to Reporting | Export

45 of the 47 Institutions in Nigeria have publications within Engineering (2012 to >2017):

Institution	Publications	Authors	Value of awards, USD	Citations
1. Covenant University	342 ▲	342 ▲	0	457
2. Federal University of Technology, Akure	307 ▲	330 ▲	0	568
3. Ahmadu Bello University	307 ▼	310 ▼	0	427
4. Obafemi Awolowo University	297 ▲	297 ▲	0	396
5. University of Lagos	248 ▼	264 ▼	0	366
6. University of Ibadan	230 ▼	247 ▼	0	518
7. University of Ilorin	208 ▲	192 ▼	0	489
8. Federal University of Technology, Minna	207 ▼	242 ▲	0	867
9. University of Nigeria	196 ▲	201 ▲	0	399
10. University of Benin	156 ▼	159 ▼	0	120

▲ +833.3%

Up 833.3% over the period 2012–2016

Nigeria

The Leadership Mandate for Covenant Towards Vision 10:2022

2012 to >2017 | Computer Science | ASJC | Data sources

Summary | Topics | Awarded Grants | Published | Viewed | Cited | Economic Impact | Authors | Institutions

Institutions in Nigeria

+ Add to Reporting | Export

45 of the 47 Institutions in Nigeria have publications within Computer Science (2012 to >2017):

	Institution	Publications	Authors	Value of awards, USD	Citations
1.	Covenant University	339 ▲	295 ▲	0	275
2.	Federal University of Technology, Minna	145	208 ▲	0	210
3.	University of Ibadan		133 ▲	0	137
4.	Federal University of Technology, Akure		147 ▲	0	163
5.	Obafemi Awolowo University	109 ▲	143 ▼	0	93
6.	University of Nigeria	99 ▲	124 ▲	0	161
7.	Ahmadu Bello University	79 ▲	129 ▼	0	101
8.	University of Ilorin	78 ▲	97 ▲	0	161
9.	University of Lagos	73 ▼	103 ▼	0	63
10.	Bayero University	60 ▲	56 ▲	0	73

▲ +750.0%

Up 750.0% over the period 2012–2016

Nigeria

The Leadership Mandate for Covenant Towards Vision 10:2022

2012 to >2017 | Business, Management and Accounting | ASJC | Data sources

Summary | Topics | Awarded Grants | Published | Viewed | Cited | Economic Impact | Authors | Institutions

Institutions in Nigeria

+ Add to Reporting | Export

42 of the 47 Institutions in Nigeria have publications within Business, Management and Accounting (2012 to >2017):

	Institution	Publications	Authors	Value of awards, USD	Citations
1.	Covenant University	206 ▲	316 ▲	0	73
2.	Obafemi Awolowo University	99	107 ▲	0	151
3.	University of Lagos		82 ▲	0	145
4.	University of Nigeria		78 ▲	0	66
5.	University of Ibadan	61 ▲	72 ▲	0	55
6.	University of Ilorin	31 ▲	51 ▲	0	21
7.	University of Port Harcourt	30 ▲	33 ▲	0	22
8.	Federal University of Technology, Akure	26 ▲	31 ▲	0	35
9.	University of Uyo	26 ▲	34 ▲	0	59
10.	Lagos State University Ojo, Lagos	26 ▼	26 ▼	0	37

▲ +1,140.0%

Up 1,140.0% over the period 2012–2016

Nigeria

The Leadership Mandate for Covenant Towards Vision 10:2022

2012 to >2017 | Arts and Humanities | ASJC | Data sources

Summary | Topics | Awarded Grants | Published | Viewed | Cited | Economic Impact | Authors | Institutions

Institutions in Nigeria

+ Add to Reporting | Export

44 of the 47 Institutions in Nigeria have publications within Arts and Humanities (2012 to >2017):

Institution	Publications	Authors	Value of awards, USD	Citations
1. University of Ibadan	200 ▲	185 ▲	0	168
2. Obafemi Awolowo University	132 ▲	120 ▼	0	85
3. University of Nigeria	132 ▲	193 ▲	0	66
4. University of Calabar	91	96 ▼	0	66
5. University of Ilorin	63 ▼	63 ▼	0	25
6. Covenant University	63 ▼	83 ▲	0	75
7. University of Benin	62 ▼	63 ▼	0	18
8. Delta State University Nigeria		57 ▼	0	34
9. University of Lagos		66 ▼	0	56
10. Ekiti State University	47 ▼	58 ▼	0	19

▼ -18.2%

Down 18.2% over the period 2012–2016

Conclusion

- It is important that as leaders we adopt necessary IT skills to ensure that we ***strengthen and leverage our professional relationships***. The world is becoming a IT field, inability to innovate and thrive in this new environment will only see such "*leaders*" make way for *disruptive*, and savvy leaders.
- Even as we take steps to enhance our operations through renovating our ICT infrastructure, we must ensure that the following objectives are not overlooked:
  - *Increased employee confidence;*
  - *Proficiency and operational flexibility among virtual teams/units;*
  - *Increased employee participation, and freedom of creativity;*
  - *Efficient knowledge sharing; and*
  - *Enhanced relations with global partners.*

References

1. Thomas L. Friedman. (2005). The World is Flat. (ISBN 1-59397-668-2)

2. Kim MC., Kim JK. (2001) Digital Divide: Conceptual Discussions and Prospect. In: Kim W., Ling TW., Lee YJ., Park SS. (eds) The Human Society and the Internet Internet-Related Socio-Economic Issues. HSI 2001. Lecture Notes in Computer Science, vol 2105. Springer, Berlin, Heidelberg.

3. Atayero A.A., Oluwatobi S.O., Alege P.O., "An Assessment of the Internet of Things (IoT) Adoption Readiness of Sub-Saharan Africa", Journal of South African Business Research, Vol. 2016 (2016), DOI: 10.5171/2016.321563, available at: http://bit.ly/2z8Hpsg

4. Atayero A.A.," Relationship between ICT Education and Knowledge Economy in Africa", ICADI 2015, Covenant University, Ota, available at: http://bit.ly/2z8dnVJ

5. Thomas Friedman, "The World is Flat".

6. Thomas Friedman, "Hot, Flat, and Crowded".

7. George Barna, "Future Cast".

8. https://s3.amazonaws.com/postscapes/IoT-Harbor-Postscapes-Infographic.pdf.

9. http://bit.ly/at-iot-harbor

10. J. Salmi, "The Chalenge of Establishing World-Class Universities, available at:"http://bit.ly/at-wcu

Harbor Research
HarborResearch.com // aglaser@harborresearch.com // 303.786.9000

Postscapes™
Postscapes.com // tharwood@postscapes.com // 720.306.1214

Vision 10:2022
1-of-10-in-10