



DIGITAL ECONOMY

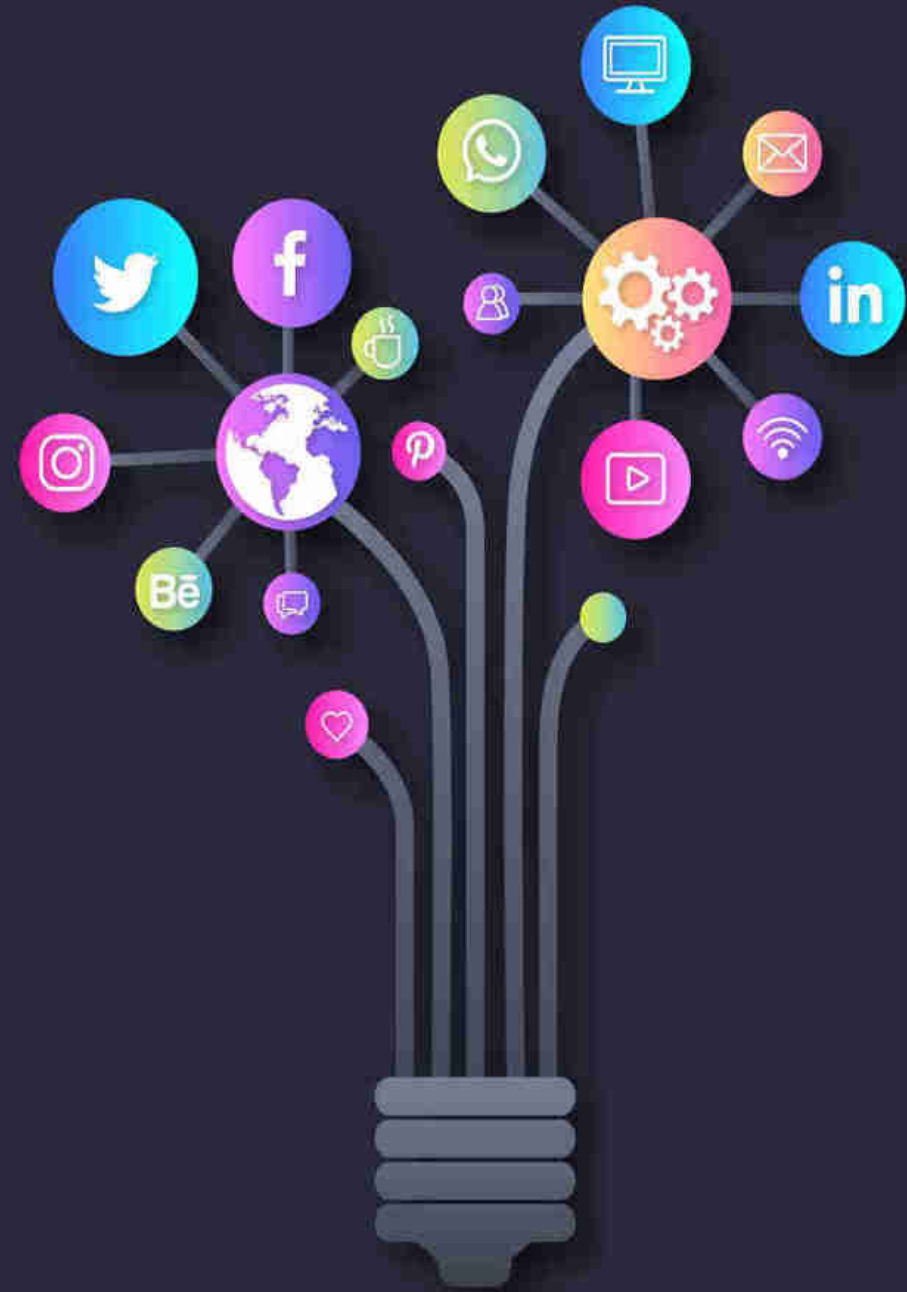
The Role of the Nigerian Engineer in a Digital Economy: Opportunities and Challenges

BY

ENGR BALA A. SALIHU (PHD) MNSE, HCIP, ICDL

Rundown of Presentation

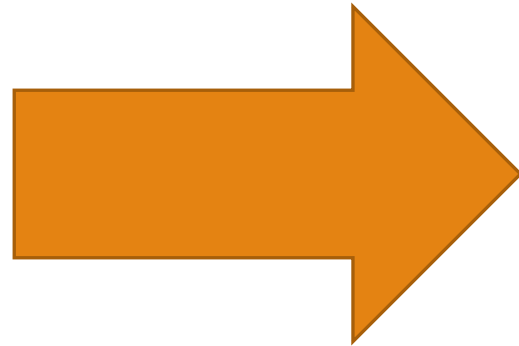
- What is Digital Economy
- Where lies the Opportunity
- Who are the Engineers
- The Engineers' Roles
- The Challenges
- Overcoming the Challenges



Digital Computing devices



From Basic Computers



More Sophisticated and Miniaturized Devices

Digital Computing Enablers

Basic Computing



Artificial
Intelligence

Machine
Learning

Automation

Complex Computing



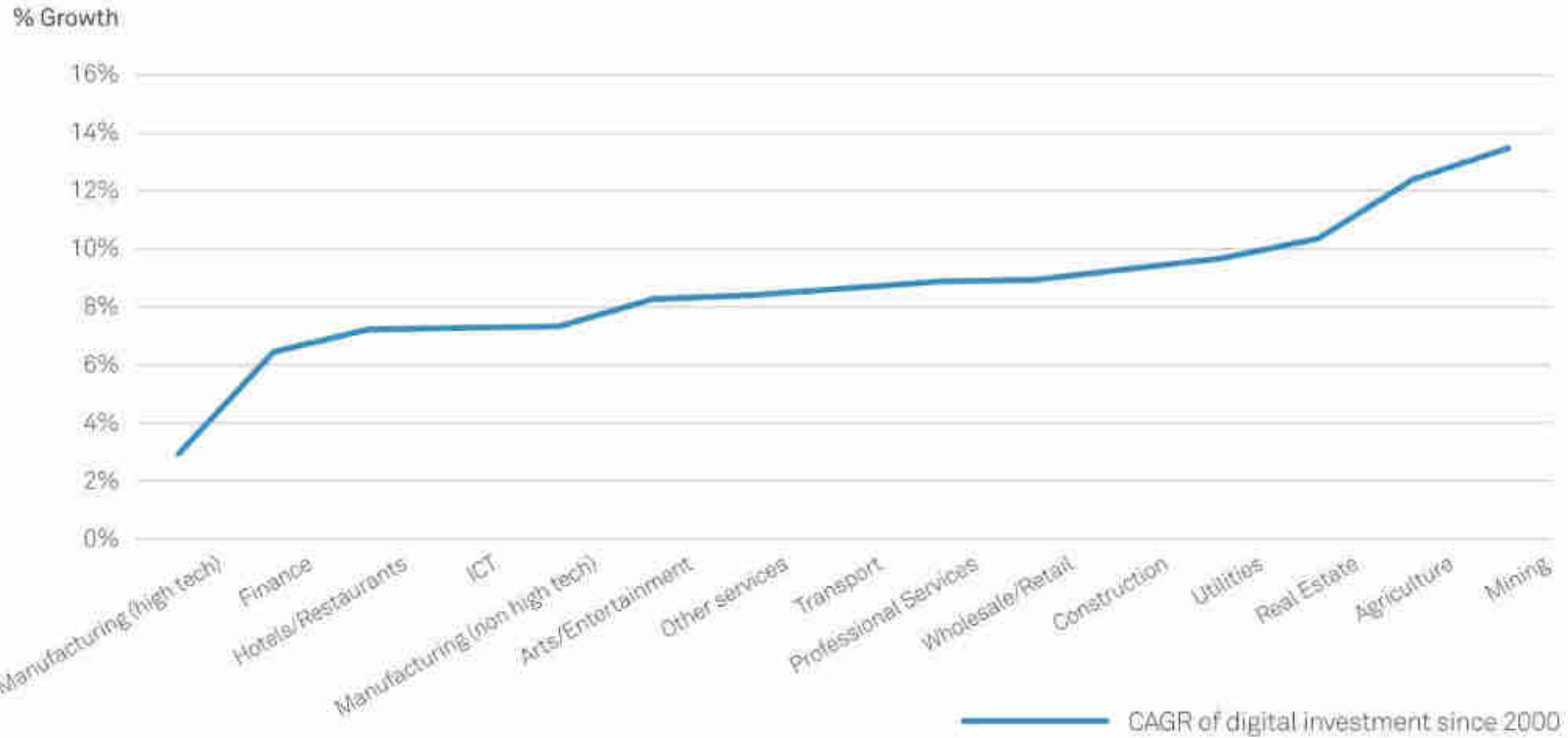
Digital Computing Enablers

Digital technologies have shaped global economic progress over the past decade, but their impact has only just begun.

Over the past 10 years, the Internet (particularly the mobile Internet) has driven a profound digital transformation in consumption behavior and experience. From purchasing channels to payment processes, disruption and cross-industry impact have become the new norm.

Growth in digital investment across sectors

(Compound Annual Growth Rate (CAGR) of digital investment since 2000 across sectors).



Source: EU KLEMS; Oxford Economics

Projection of Digital Economy?



NIGERIAN
INVESTMENT
PROMOTION
COMMISSION

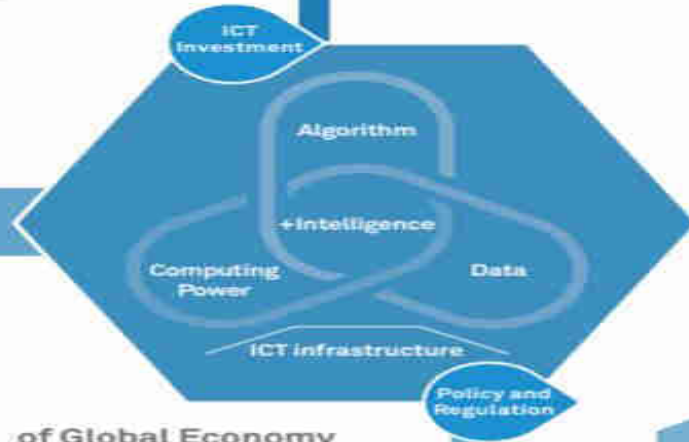
NIGERIA

OPPORTUNITIES & INCENTIVES

Nigeria's Digital Economy to Generate \$88b by 2021

| October 10, 2018

2016

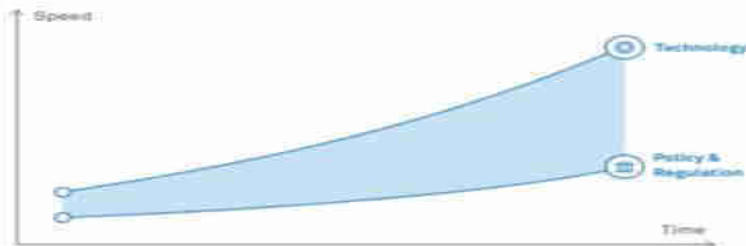


15.5% of Global Economy is Digital

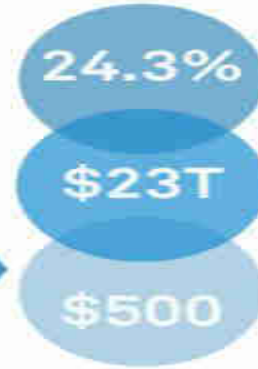
Digital Economy Growth vs Global Economy Growth

Digital Investment ROI vs Non-Digital Investment ROI

Gap between Technology and Policy & Regulation



2025



24.3% of Global Economy is Digital

\$23T Digital Economy

\$500 Equivalent Extra Income for an Average Worker



Digital Economy Building Blocks



Design & Engineered



Design only

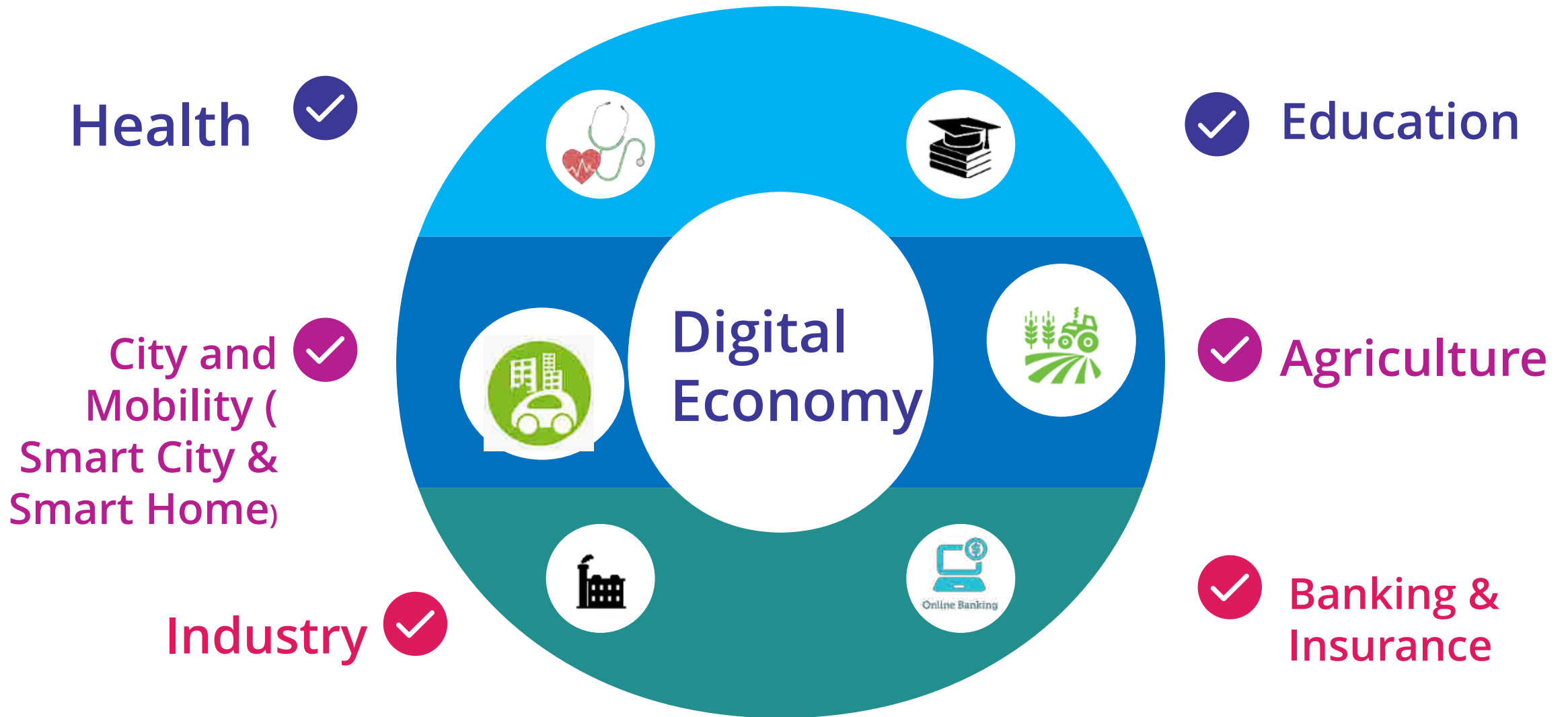


Digital Economy Building Blocks?

It is based on the interconnectedness of people, organizations, and machines that results from the Internet, mobile technology and the Internet of Things (IoT).



Where Lies the Opportunities?



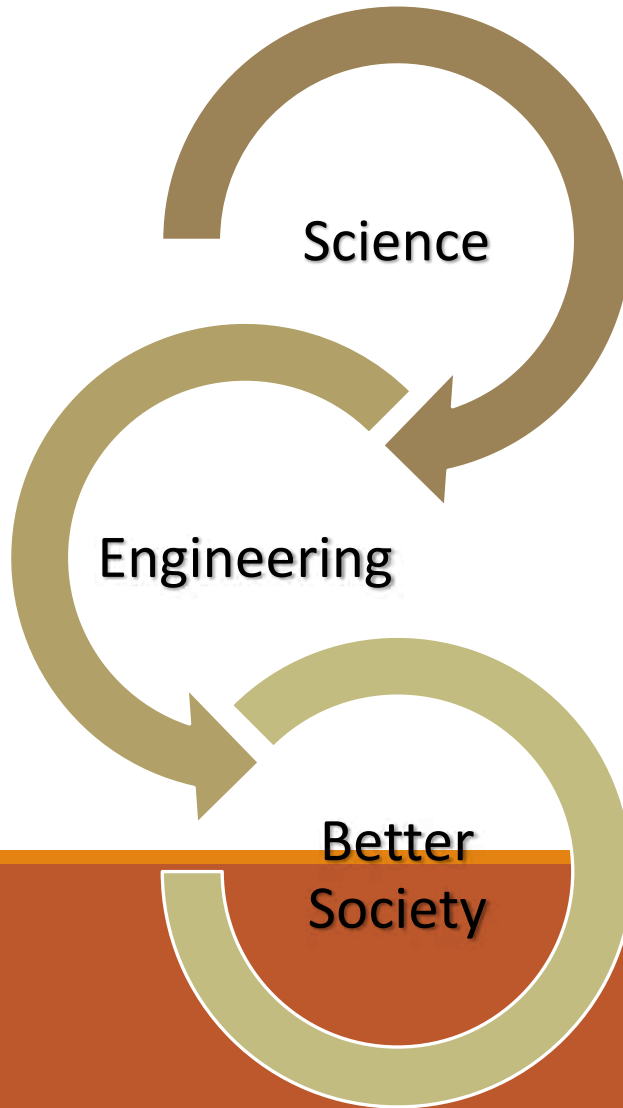
If there are nine
rabbits on the ground,
If you want to catch one,
Just focus on one.



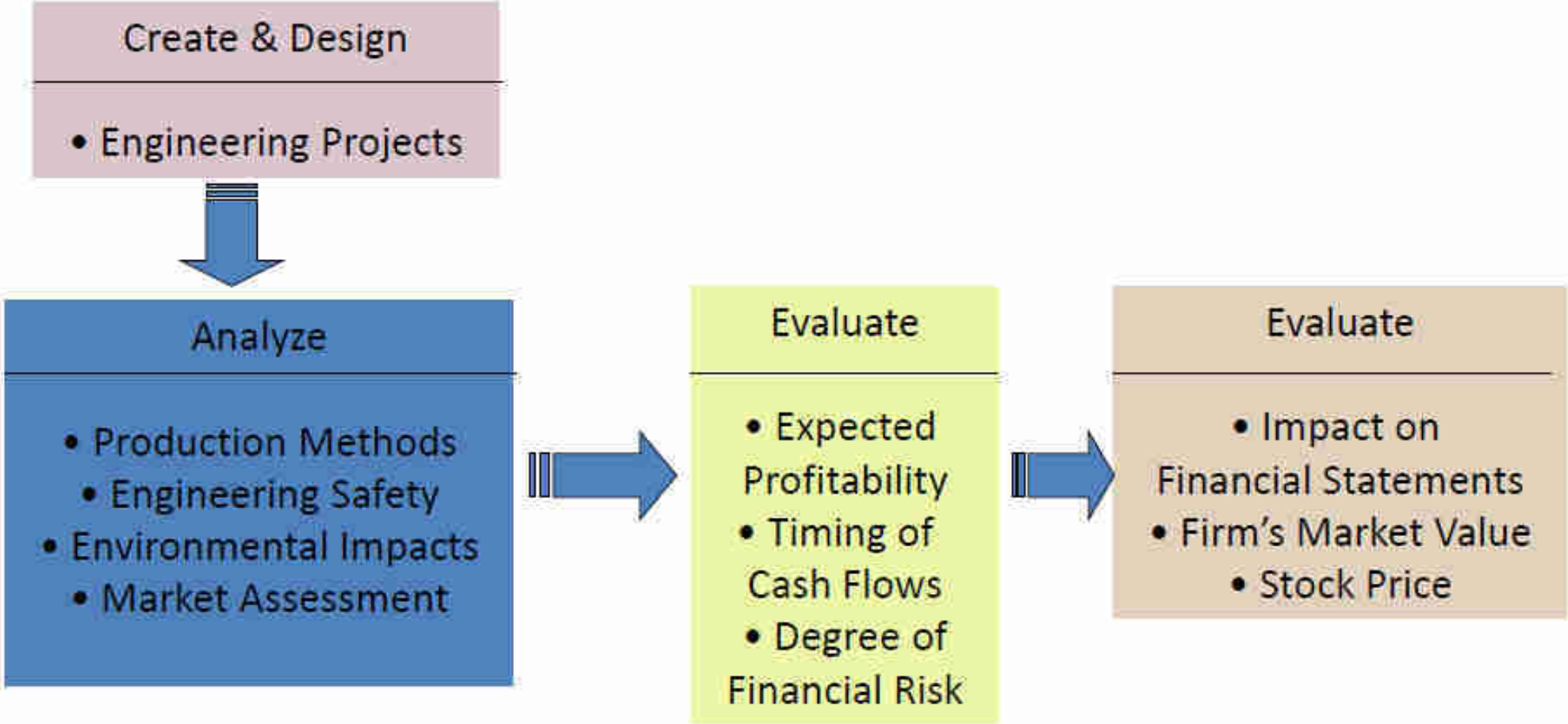
Engineering

Application of Scientific Knowledge to meet Human and Animal needs





Role of Engineers in Business



Expectation from Engineers



Civil



AERONAUTIC



Water

Expectation from Engineers



Setsmart Industrial Control So...
setsmartsolutions.com



How Automation in Computer ...
techfunnel.com



Design Engineers | Phoeintl
phoeintl.com



AI equipment monitoring and ...
isa.org



8 Benefits of Mobile Device Co...
abr.com



Is 'Smart Compose' Taking the...
entrepreneur.com



Essential Guide to Modern Fac...
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Computer vision – three exciti...
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5 Key Business Processes that...
blog.vsoftconsulting.com

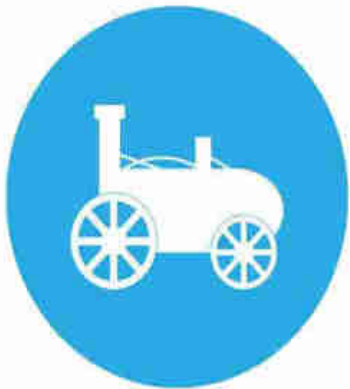


AI Initiatives in Manufacturing ...
internetofbusiness.com



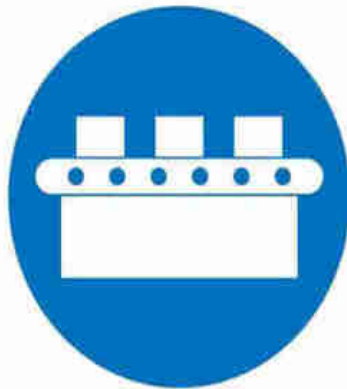
Expectation from Engineers

1st revolution



Mechanization, steam
and water power

2nd revolution



Mass production and
electricity

3rd revolution



Electronic and IT
systems, automation

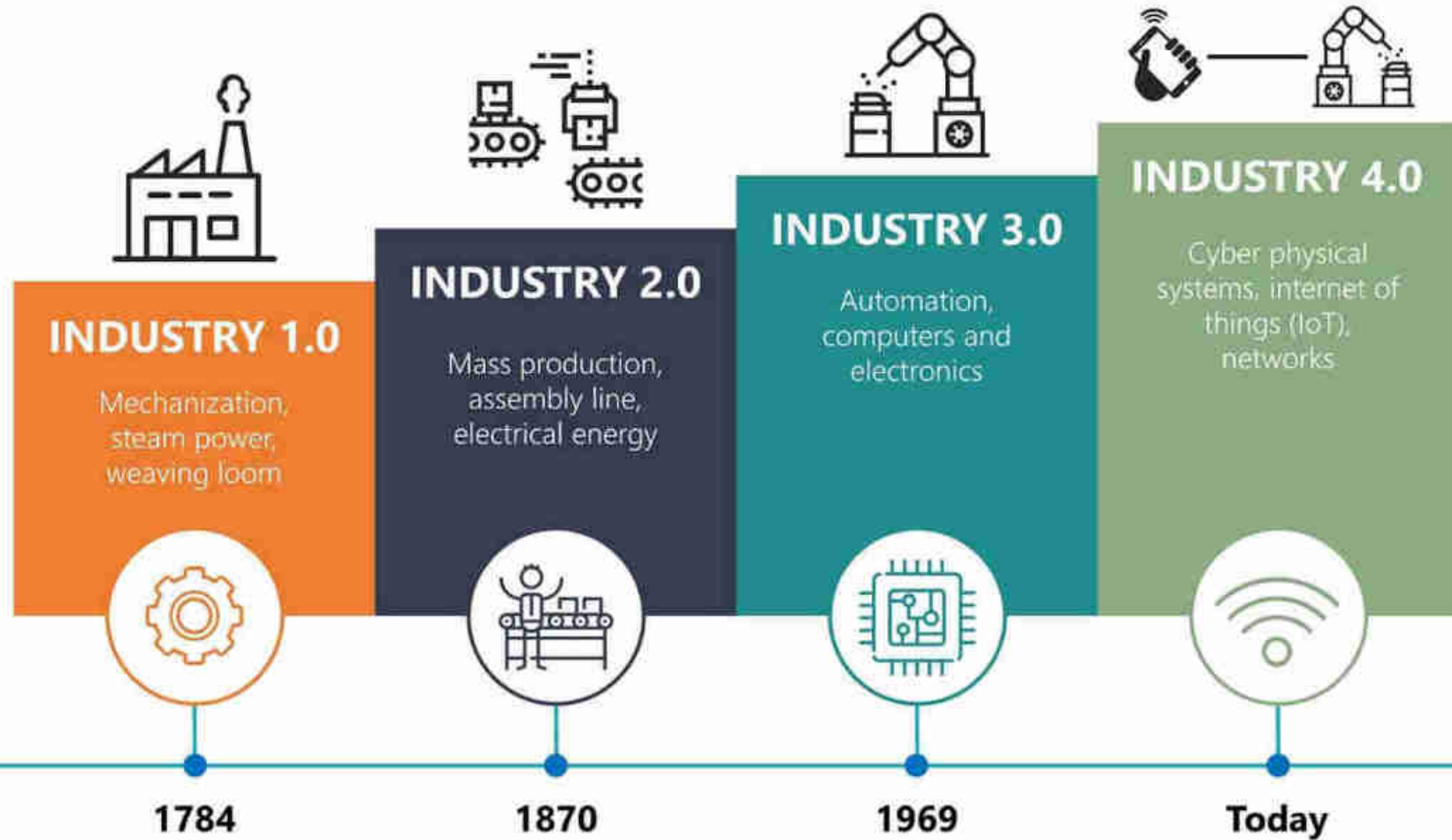
4th revolution



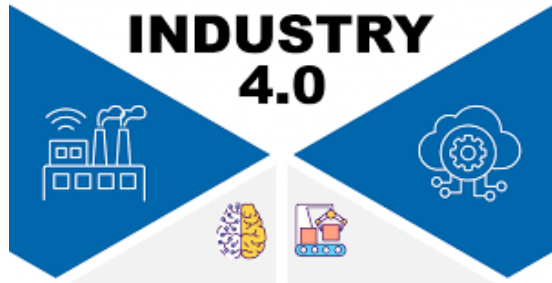
Cyber physical
systems

Industry 4.0 refers to a new phase in the Industrial Revolution that focuses heavily on interconnectivity, automation, machine learning, and real-time data.

Expectation from Engineers



Expectation from Engineers



The Challenges

New Technology ✓

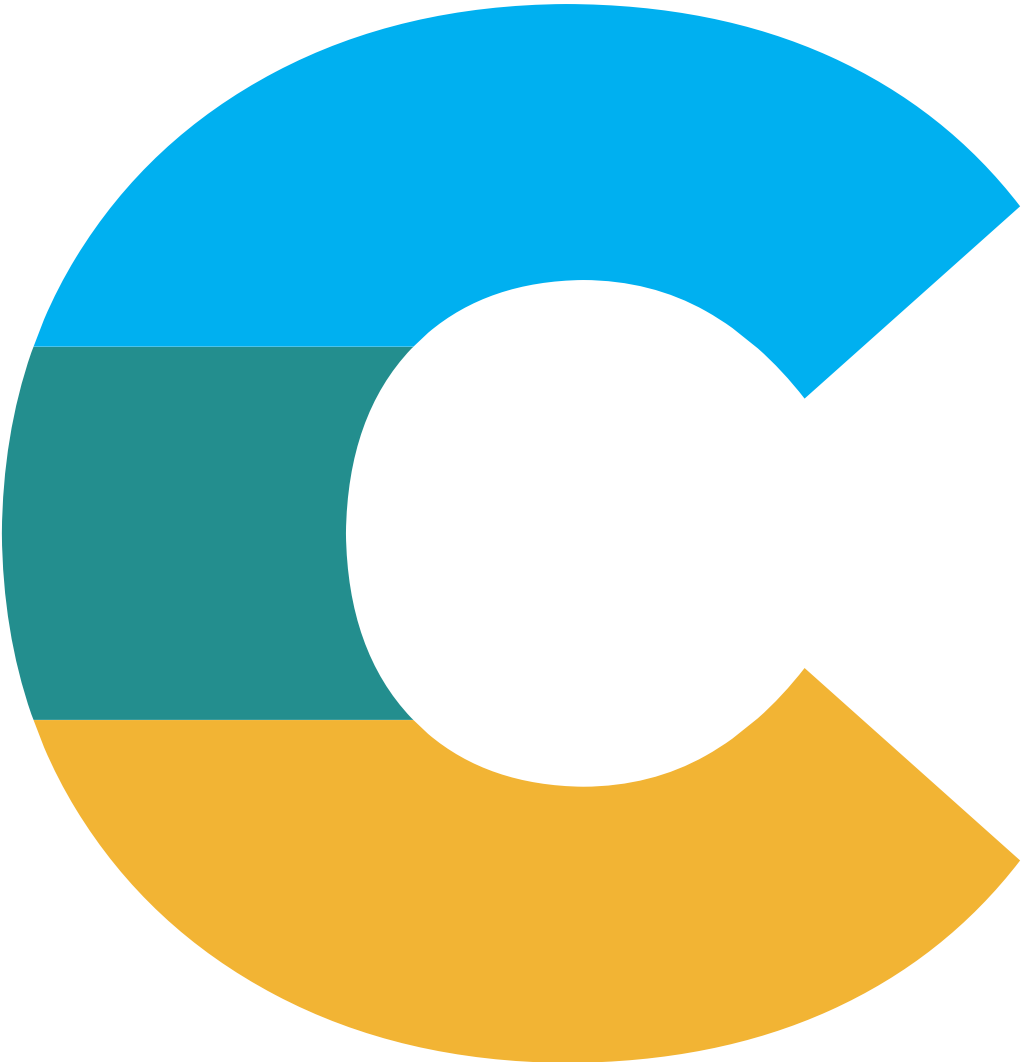
New competitors ✓

New regulations ✓

✓ New customers

✓ New business models

✓ New global threats



OVERCOMING THE CHALLENGES

Infrastructure

- Making long-term investments to address basic infrastructure gaps

Safe Space for digital products

- Creating an environment that supports safe, widespread consumer adoption of digital products and services.

Digital Access to Disadvantaged

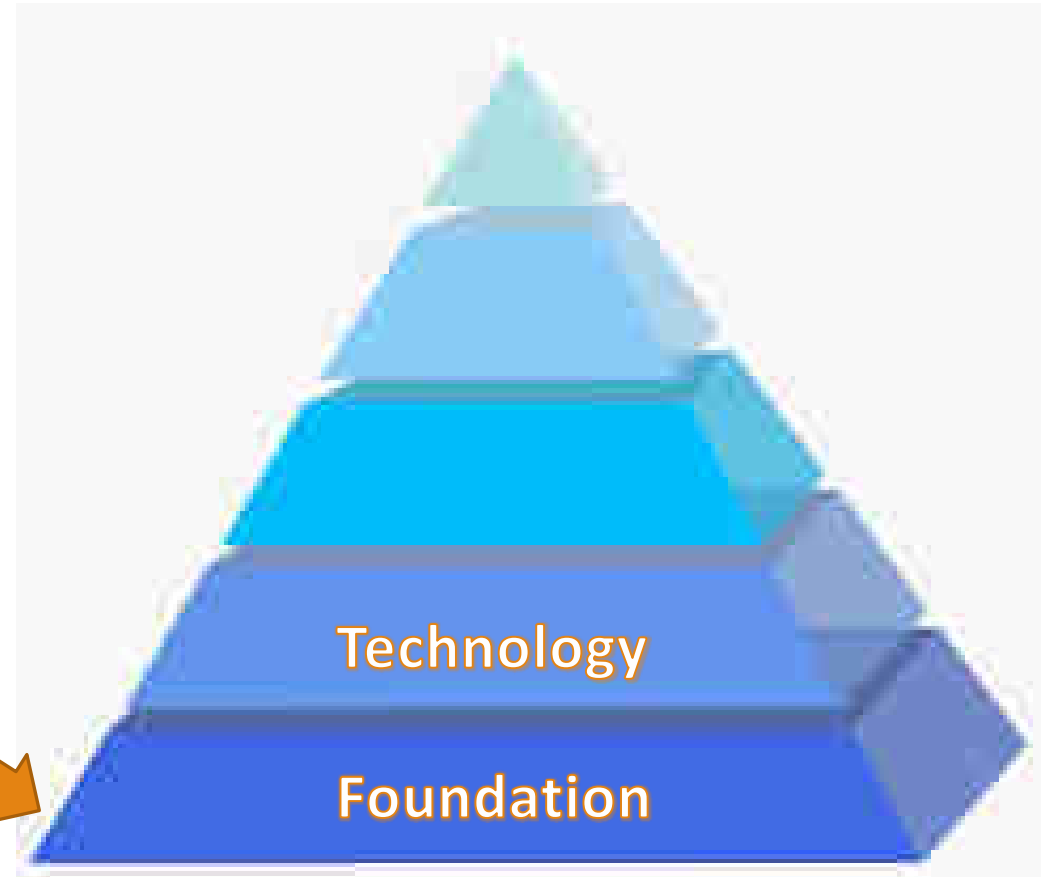
- Promoting initiatives that invest in digital access to historically disadvantaged segments of the population.

Application for pressing needs

- Promoting applications that solve pressing needs such as mobile payment platforms.

OVERCOMING THE CHALLENGES

October 17, 2019,
President Muhammadu
Buhari had approved
submission for the
expansion of Ministry of
Communication's mandate
to cover Digital Economy



FG Effort for Digital Economy



www.digitalnigeria.gov.ng

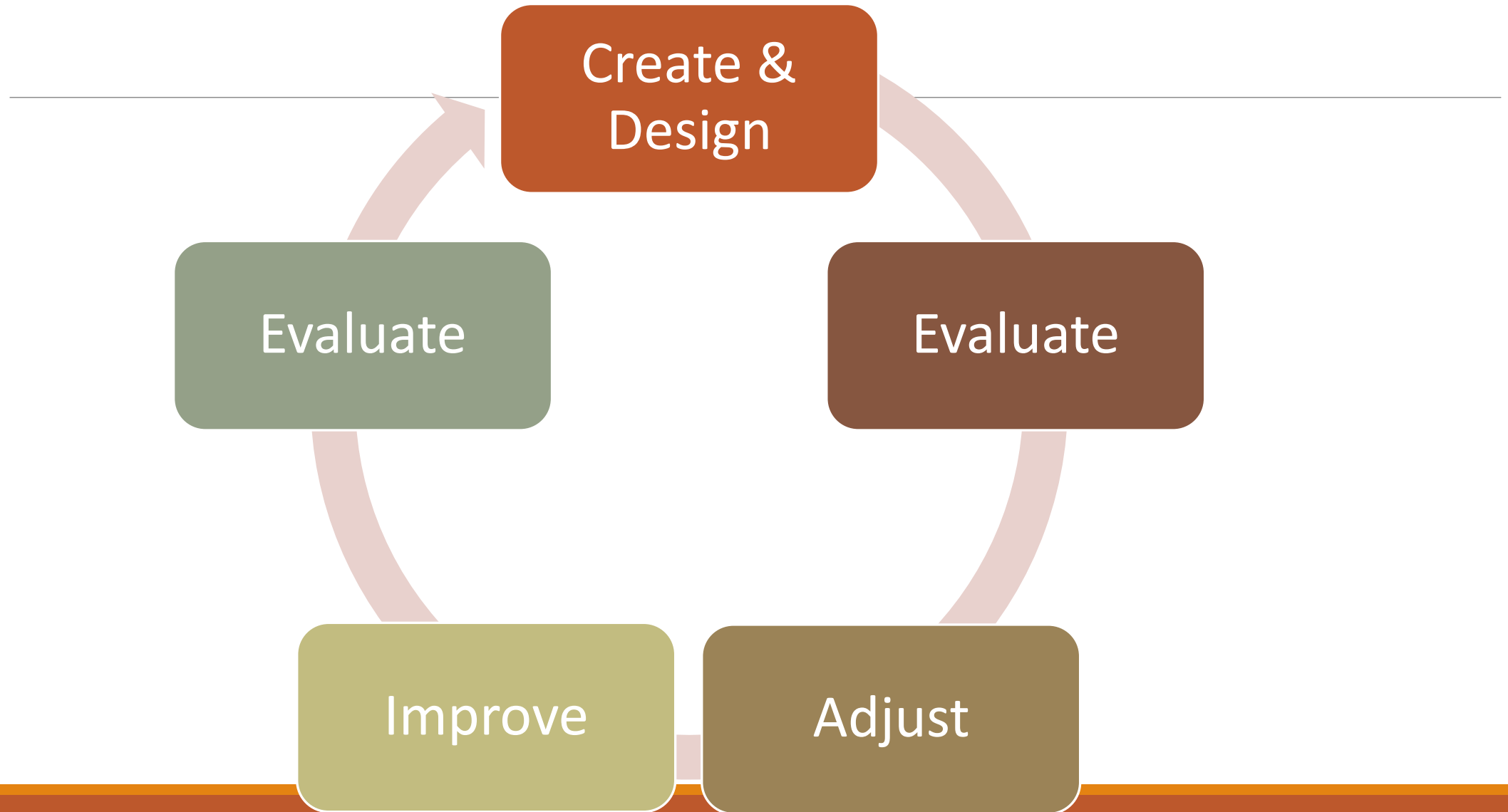


www.digitalnigeria.gov.ng

Roles of Engineers Towards Industry 4.0



Roles of Engineers



Industry 4.0 and Leadership 4.0 in Nigeria





Digital Economy

Create opportunities for specialization and cooperation between companies from different regions by **reducing transaction costs, creating ease of access to foreign markets** and **facilitating the development of new models** of electronic business.

Information Efficiency

The digitalization of the economy increases efficiency and optimizes business processes. The transformation of the digital economy determines the transformation of person and society.

Information Technology

The internet, cloud computing, big data, and other new digital technologies are used to collect, store, analyze, and share information digitally and transform social interactions.

Digital Wallet

Digital wallets are financial accounts that allow users to store funds, make transactions, and track payment histories by computer

World Wide Network

Online connection is now seemly among businesses ,people , data , devices and processes. It is based on the interconnectedness of people, organizations, and machines that results from the internet, mobile technology and the internet of things (IoT).

Data Center

Data centers provide benefits throughout the entire economy, such as agility, scalability, control of CAPEX and OPEX, and cost efficiency.

E-commerce

E-commerce has already improved business value by fundamentally changing the ways products are marketed, delivered, and supported

Digital Marketing

There are many variations of passages majority have you anything embarrassing

Traditional Vs Digital Economy

Traditional economy	Digital economy
Factories	Data centres/ Cloud computing
High street shops	Internet
Newspaper ads/word of mouth	Social media reviews
Transportation	E-sales – digital downloads
Banks and cash points	E-Banking
School/textbooks	E-learning, e-books
9-5 commute	Working from home
Physical assets	Google rankings / brand image
Construction	Website development
Real estate	Domain ownership
Cash – cheque payment	e-payment, cashless society
Labour and capital	Automation and AI.



THANK YOU
for listening!



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