

# Implications of the Fourth Industrial Revolution Technologies on Supply Chains

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# Key Issues

- ▶ FIR: Among the current issues of discussion across the world - WEF 2016 in Davos
- ▶ FIR techs have many implications in virtually all spheres of life across the globe
- ▶ Are disruptive techs: Transforming all sectors of the economy in unprecedented and exponential manner
- ▶ Techs have, are and will disrupt supply chains
- ▶ Key question: Are we ready as professionals to cope with the disruptive techs of the FIR?

# Ngowi's 10 works on FIR in 2018

- ▶ 4 newspaper articles: Citizen 27<sup>th</sup> Oct: In Tz context; 17<sup>th</sup> Nov (labour mrk) and Mwananchi: 1<sup>st</sup> Oct (Tz relevance); Nov 15<sup>th</sup> (FIR in education)
- ▶ 2 ITV Programmes: On blockchain technology
- ▶ Nyerere Day paper: FIR techs in education (<http://www.ngowitv.co.tz/elimu-iendane-namageuzi-ya-nne-ya-viwanda-prof-ngowi/>)
- ▶ FIR implications on banks: Zanzibar 29<sup>th</sup> Dec
- ▶ FIR implications on supply chain: Dodoma 5<sup>th</sup> Dec
- ▶ FIR implications on accountancy: NBAA Dar 6<sup>th</sup> Dec
- ▶ FIR implications on financing industrialization: EST Dar 7<sup>th</sup> Dec

# Fourth Industrial Revolution - FIR

- ▶ There have been three industrial revolutions before the FIR.
- ▶ 1<sup>st</sup>: Use of water and steam power technology
- ▶ 2<sup>nd</sup>: Discovery and use of electricity for mass production
- ▶ 3<sup>rd</sup>: Discovery and use of electronics and information technology (IT): We are mainly here
- ▶ Since the middle of the 20<sup>th</sup>C: FIR

# The FIR: Technology is at the centre

- ▶ Building on the first one; At infancy stage
- ▶ Characterized by digitization
- ▶ Fusion of technologies related to the physical, digital and biological spheres
- ▶ Disruption in virtually all industries globally
- ▶ Transforming all production, management, governance, supply chains etc
- ▶ Altering the way businesses operate and transact
- ▶ Altering the way people live, work and interact
- ▶ Affecting the procurement and ss chain profession

# FIR ...

- ▶ Moving and shaking all sectors of all economies such as procurement and supply chain
- ▶ Implications in labour mrkt/future of jobs in procurement & ss chains: Repetitive, routine, low skills, low tech jobs are lost: Amazon in Hamburg
- ▶ Implications on policies, laws, regulations including in procurement and supply chains: Commercial law, Procurement Act
- ▶ Implications to professional & regulatory bodies including procurement and ss chains (PSPTB): Blockchain tech based transactions, certifications; cryptocurrencies; AI; IoT; AM (3D printing) etc

# FIR ...

- ▶ New systems, structures, products in procurement & SS chain transactions: **You need to know them**
- ▶ New business models: Uber/Taxify, AirBnB, cryptos, digital market places/wallets and platforms (Jumia, Kikuu at Shoppers plaza) competing/complementing traditional systems? Digital procurement age
- ▶ Implications on regulatory frameworks (smart procurement regulations): Blockchain, innovations
- ▶ Is disrupting normalcy, comfort zones, bus as usual in procurement and supply chain: **Are you cast in stone?**  
You will be left by dynamic individuals and businesses

# Key Questions to Ask (and answer)

- ▶ Is the procurement and supply chain profession ready to operate/transact in and with new systems, structures, business models and products brought by the FIR technologies? **You are not in vacuum**
- ▶ Examples: Businesses have documents on blockchain; AI; autonomous vehicles (drones in Ukerewe; Tz - See Citizen 4<sup>th</sup> Dec 2018): **What does it imply to you?**
- ▶ Are we ready to operate in blockchain, AI/robots, IoT, enterprise wearables etc environment with such products as cryptocurrencies? If not ready **what is its competition implication?**



# Technologies Driving the FIR: See above

- ▶ Blockchain; AI (robots), IoT; autonomous vehicles; wireless connections; sensors; corporate wearables; AM; cloud computing etc: **Can procurement and SS chain professions deal with these?**
- ▶ Are transforming production processes, systems, structures, products and business models: **Is the procurement and SS chain profession aware of these?**
- ▶ Is the procurement and SS chain profession ready for the FIR driven by these techs? Does the profession **know the techs and their implications** to the industry? Are you 'still' **relevant or extinct/history?**

# Implications of Techs of the FIR for Procurement and SS Chain Profession

- ▶ Transforming production and business models including procurement & SS chain
- ▶ Products/services are being re-shaped to an unprecedented degree and pace
- ▶ Can you still recognize old products/services when procuring: **Transport** (Uber/Taxify); **accommodation** (Air BnB). No need to own fleets of cars or properties to win tenders: **Are laws, regulations ok with this?**
- ▶ Brain power is the new competitive age/force. Not physical resources. **Are laws, regulations ok with this?**

# Implications ...

- ▶ Bidders & products nature have changed with business models: procurement & SS chain professionals **need to be updated/current**
- ▶ Revolutionizing traditional ways of doing things: Drones deliveries; robots operations: **Are we ready/compatible?**
- ▶ Disrupting accepted practices, systems and structures: Digital not manual procurement & SS chain: No need to **walk** to get 3 quotations!
- ▶ Be digital native; **technology savvy or you perish!**  
BBC? You can still learn: Life long/wide learning

# Implications to procurement & SS chain ...

- ▶ Improving factor productivity: L, L, K, E: Extending HR physical (machines) and cognitive capability (AI): **Are you coping?** If not, **competitiveness is in danger**
- ▶ Future will favour the bold and most digitally connected: **Most adaptive not strongest will survive**
- ▶ Brain power is needed for competitiveness in FIR: Do you have it? **Do we recognize this in procurement?**
- ▶ **Need to be future-ready in procurement & SS chain;**
- ▶ Tech is disrupting transaction partners: Banks, producers; transporters; ports, airports etc: **Are we compatible and aligned as procurement & SS chain professionals?**

# Implications to procurement & SS chain ...

- ▶ Innovation; flexibility: Change orientation and management: **Are we rigid as a profession?**
- ▶ Investment in HR: Training, re-training, life - long and life - wide learning: Are **YOU investing in HR of FIR?**
- ▶ Digitization: Be digital native; technology-savvy: Invest in digital techs/infrastructure for procurement & SS chain. Example: **What kind of stores, warehouse are demanded in the FIR driven by technologies?**

# Implications to procurement and SS chain profession...

- ▶ Employment, future of jobs: Core employability skills and talents mix scanning: **Do you have the FIR skills? How and who are you recruiting? BBC?**
- ▶ Implications to authorities: Govts, regulators: Supporting environment: Legal, policy & regulatory: **Recognize & support FIR and its techs** (Blockchain, cryptocurrencies: different country positions: Very liberal to conservative and in-between positions: Yes, own risk, no: The profession should **advise authorities accordingly on FIR techs issues in procurement and SS chain**

# Concluding remarks

- ▶ Disruptive techs are changing everything everywhere
- ▶ It is epochal transformation towards the FIR
- ▶ The FIR is unavoidable: A matter of time is on u r door
- ▶ Not everything is moving towards FIR at once, same speed
- ▶ We still have elements of the 3<sup>rd</sup> industrial revolution
- ▶ We can keep on operating in the 3<sup>rd</sup> industrial revolution but with relevant FIR techs in mind
- ▶ FIR techs are still evolving: Need to be vigilant
- ▶ At the minimum: Know what it is and its many and far-reaching implications; Know how to cope with the FIR techs
- ▶ **PSPTB needs to give strategic leadership on FIR techs**

Thank You

