4IR: Transforming Production

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Transforming production

Key messages

1. Significant manufacturing value add (MVA) opportunity
2. Countries, with different starting points, must have clear aspirations
3. Policies need to be holistic, sustainable and enable collaboration
4. Companies transform with clear North Star, taking small steps, moving fast
5. Future proof through capability building and life-long learning
5 key technologies in various stages of readiness

**Connectivity & Computing Power**
- **Internet of Things**
  - Connecting the unconnected
  - 85% of production assets today are still unconnected
  - Number of IoT devices:
    - 17 bn in 2016
    - 31 bn in 2020

**Analytics & Intelligence**
- **Artificial Intelligence**
  - Coming of age
  - 70% of captured production data goes unused – AI can change that
  - $8 bn in 2016
  - $32 bn in 2020

**Human-Machine Interface**
- **Wearables**
  - Digitizing the workforce
  - $700 mn market, projected to grow to $5 bn by 2020
  - Wearables improve operator productivity by 25% percent
  - Most industries still in early stages of adoption

**Digital – Physical transformation**
- **Advanced Robotics**
  - Emerging from the cage
  - $38 bn market
  - 250,000 units sold in 2015 – projected to grow to 400,000 units by 2020
  - Handles 10% of production tasks today
  - Rising to 45% by 2030

- **3D Printing**
  - Shaping the future one layer at a time
  - Global Market
  - $16 bn in 2020
  - $5 bn in 2016
  - Recent surge in metal capabilities

Source: World Economic Forum and A.T. Kearney
35 – 40% incremental MVA opportunity from 4IR

ASEAN MVA and 4IR Value-at-Stake 2028 (US$ B)

Implications for Bangladesh

- Significant MVA potential for Bangladesh
  - Robust GDP growth >7%
  - >50% contributor for industries
  - Double digit growth rates for industry, incl. manufacturing

However, country at nascent stage for 4IR readiness

1. MVA = manufacturing value add

Will require leapfrogging from nascent readiness

WEF Country 4IR Readiness Framework

High Potential
Limited current base, positioned well for the future

Leading
Strong current base, positioned well for the future

Nascent
Limited current base, at risk for the future

Legacy
Strong current base, at risk for the future

Drivers of Production

Demand Environment
Technology & Innovation
Institutional Framework
Global Trade & Investment
Human Capital
Sustainable Resources

Structure of Production
Scale
Complexity

Note: Average performance of top 75 countries is at the intersection of the 4 quadrants to create the archetype borders
Source: A.T. Kearney in collaboration with the World Economic Forum, Readiness for the future of production report 2018
Decide on the core and adjacent sectors

Manufacturing\(^1\) MVA by Country by Industry – ASEAN and Bangladesh
(US$ B, 2018E)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Indonesia</th>
<th>Thailand</th>
<th>Malaysia</th>
<th>Philippines</th>
<th>Singapore</th>
<th>Vietnam</th>
<th>Rest of ASEAN</th>
<th>Bangladesh</th>
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</thead>
<tbody>
<tr>
<td>Food, beverages, and tobacco</td>
<td>252</td>
<td>136</td>
<td>99</td>
<td>74</td>
<td>55</td>
<td>31</td>
<td>24</td>
<td>49</td>
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<td>Electrical and electronic</td>
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<td>Motor vehicles and parts</td>
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<td>Textiles, apparel, and leather</td>
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<td>Other consumer goods</td>
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<td>Refined petroleum and coke</td>
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<td>Transportation equipment</td>
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<td>Pharma, drugs, and medicines</td>
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<td>Metals and metal products</td>
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<td>Nonmetal products</td>
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<td>Machines and equipment</td>
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Implications for Bangladesh

Clearly identify key strategic industry sectors for 4IR
- Traditional core sectors
- Adjacent sector for regional supply chain
- Sectors of the future

Factor in national priorities (e.g. GDP growth, manufacturing share) and expected key outcome (e.g. labour force upskilling, job creation)

1. Manufacturing is based on the ISIC classifications, outputs from vertically integrated companies measured at their final output. 2. Rest of ASEAN includes: include Brunei, Cambodia, Lao and Myanmar

Sources: IHS Markit, UNIDO, A.T. Kearney Analysis
4IR case study: Indonesia country strategy

Aspiration

Aspiration statement
2030

“To become a global top 10 economy in 2030 by regaining net export advantage, driving share of GDP from manufacturing, and competing in productivity, as a result from advancement in technology and innovation”

Aspiration elements

1. Undisputed global leader
2. Revive net export advantage
3. APAC productivity-to-cost champion
4. Inspiring the Manufacturing Tech Revolution

By 2030…
(Aspirational)

Top 10 largest economy
10% net export contribution to GDP
2x current productivity vs. cost
2% of R&D spending share to GDP

Source: Ministry of Industry Indonesia, A.T. Kearney

https://www.youtube.com/watch?v=HQ_H974C5Ss
5 lessons are learnt from global policies

<table>
<thead>
<tr>
<th>Lessons learnt for Bangladesh</th>
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<tbody>
<tr>
<td><strong>Objectives</strong></td>
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<tr>
<td>1. Policymakers should have a clear, actionable, targeted and impactful objective for 4IR strategy</td>
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<td>- e.g. UK aims to double the share of manufacturing in GDP</td>
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<td>2. Priority sectors and key technologies must be identified for effective resource allocation</td>
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<td>- e.g. Germany focusing on IoT and CPS; China10 focus sectors</td>
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<td>3. Initial state support and funding is needed to kickstart the adoption; however, complementary private investment is equally important</td>
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<td><strong>Focus Areas</strong></td>
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<td>4. A collaborative effort from policy makers, implementing agencies, corporates, technology leaders and research hubs is key for success</td>
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<td><strong>Budget and funding model</strong></td>
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<td><strong>Stakeholders</strong></td>
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<td><strong>Implications</strong></td>
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<tr>
<td>5. Policy should also address negative implications of 4IR, for example, on SMEs and low skilled labor</td>
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Source: A.T. Kearney
Thank you