



**NATIONAL BIG DATA ANALYTICS FRAMEWORK**

## ABOUT MALAYSIA DIGITAL ECONOMY CORPORATION (MDEC)

ESTABLISHED IN

**1996**

GOVERNMENT  
OWNED &  
FUNDED

**LEGISLATION & POLICIES  
(ICT RELATED)**

ADVISORS TO THE GOVERNMENT OF  
MALAYSIA

**DIGITAL MALAYSIA**

A NATIONAL AGENDA TO PROGRESS THE COUNTRY  
TOWARDS BECOMING A DEVELOPED DIGITAL NATION

**20**

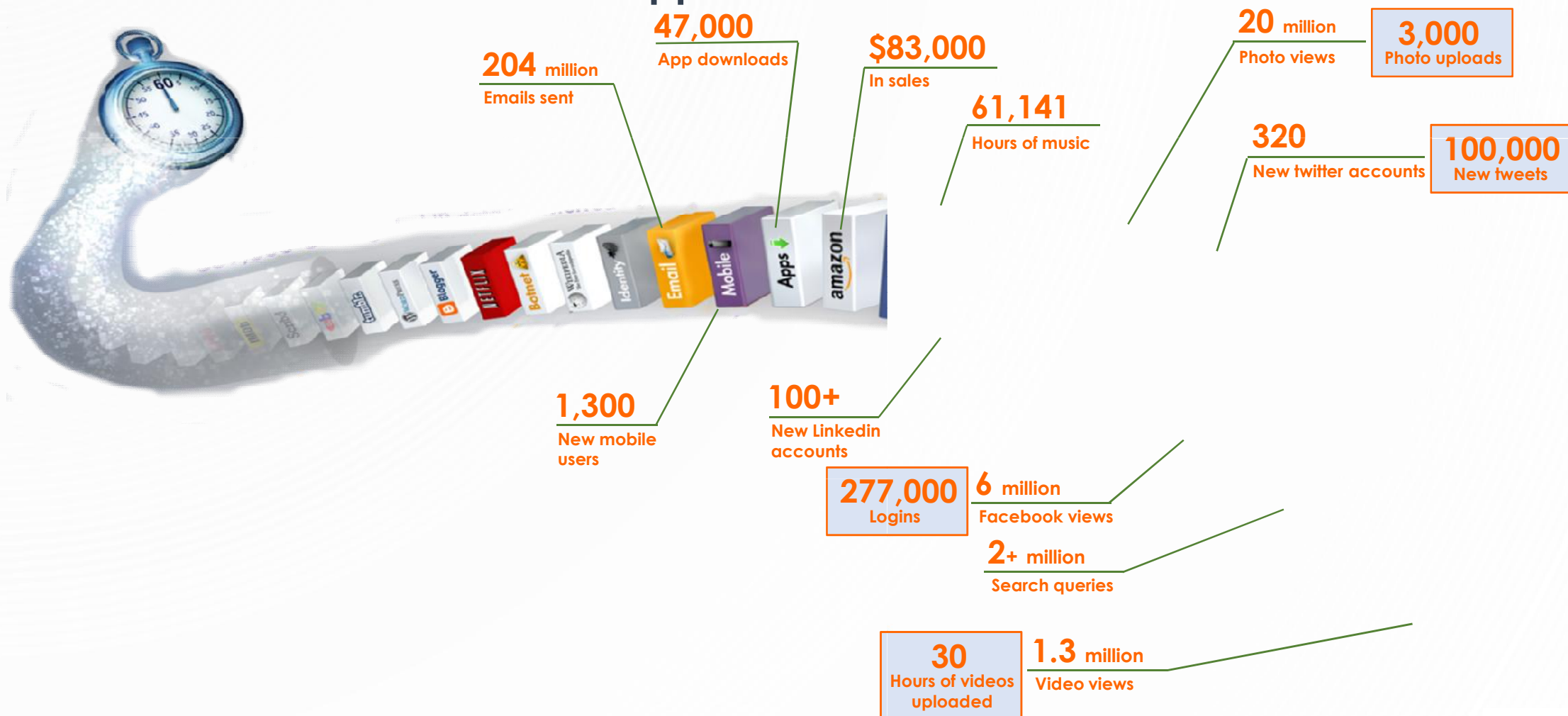
*Years and Beyond*

# WHAT IS BIG DATA?

**Big Data** is an evolving term that describes any voluminous amount of structured, semi-structured and unstructured data that has the potential to be mined for information.

# Big Data Explosion Around The World

## What Happens in an Internet Minute?

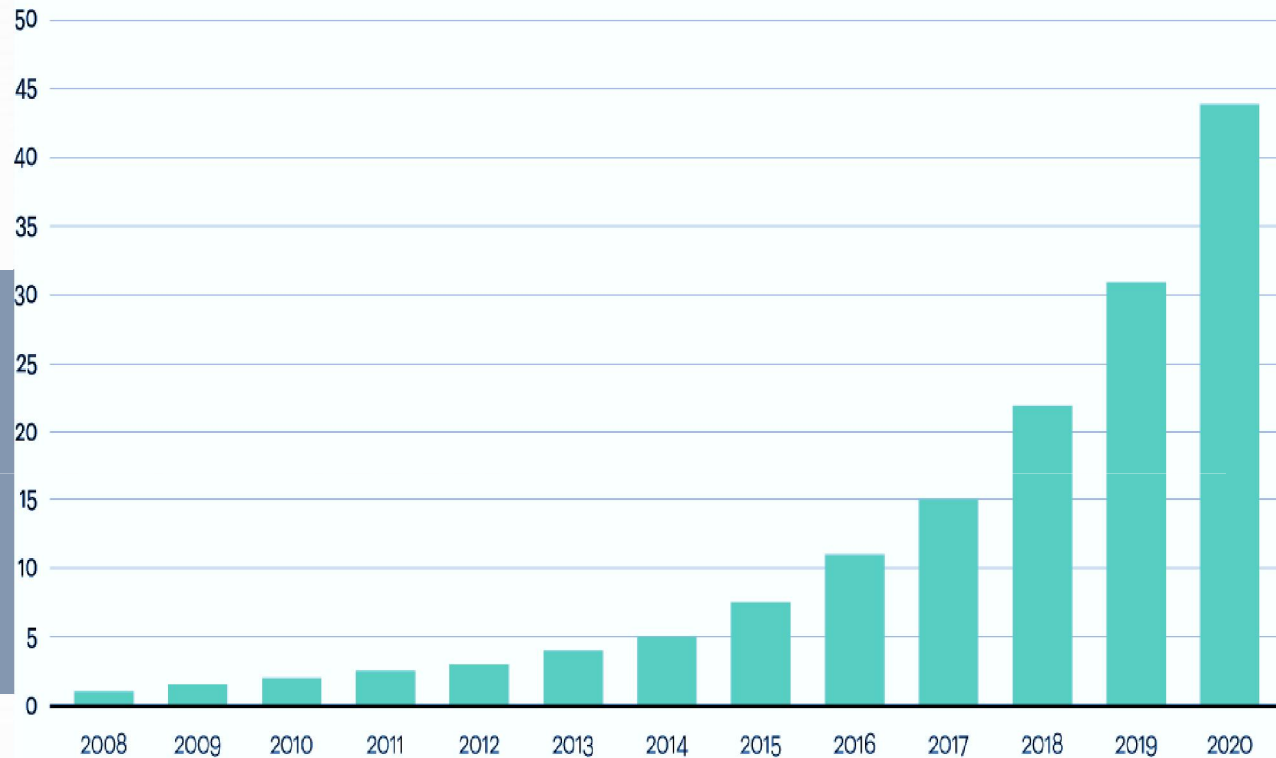


SOURCE: INTEL

# Big Data

Data is growing at a 40 percent compound annual rate, reaching nearly 45ZB by 2020

Data in zettabytes (ZB)



## Global Big Data Market is Expected to Reach USD 48.3Billion by 2018

a new market report published by Transparency Market Research "Big Data Market - Global Scenario, Trends, Industry Analysis, Size, Share and Forecast

Every day, 2.5 quintillion bytes of data are created, with 90 percent of the world's data created in the past two years alone. Data production will be 44 times greater in 2020 than in 2009. The volume of business data worldwide is expected to double every 1.2 years.

SOURCE: <https://www.atkearney.com/strategic-it>

# Big Data

Industries are using **Big Data** to transform business models and improve performance in many areas

Source: A.T. Kearney Analysis

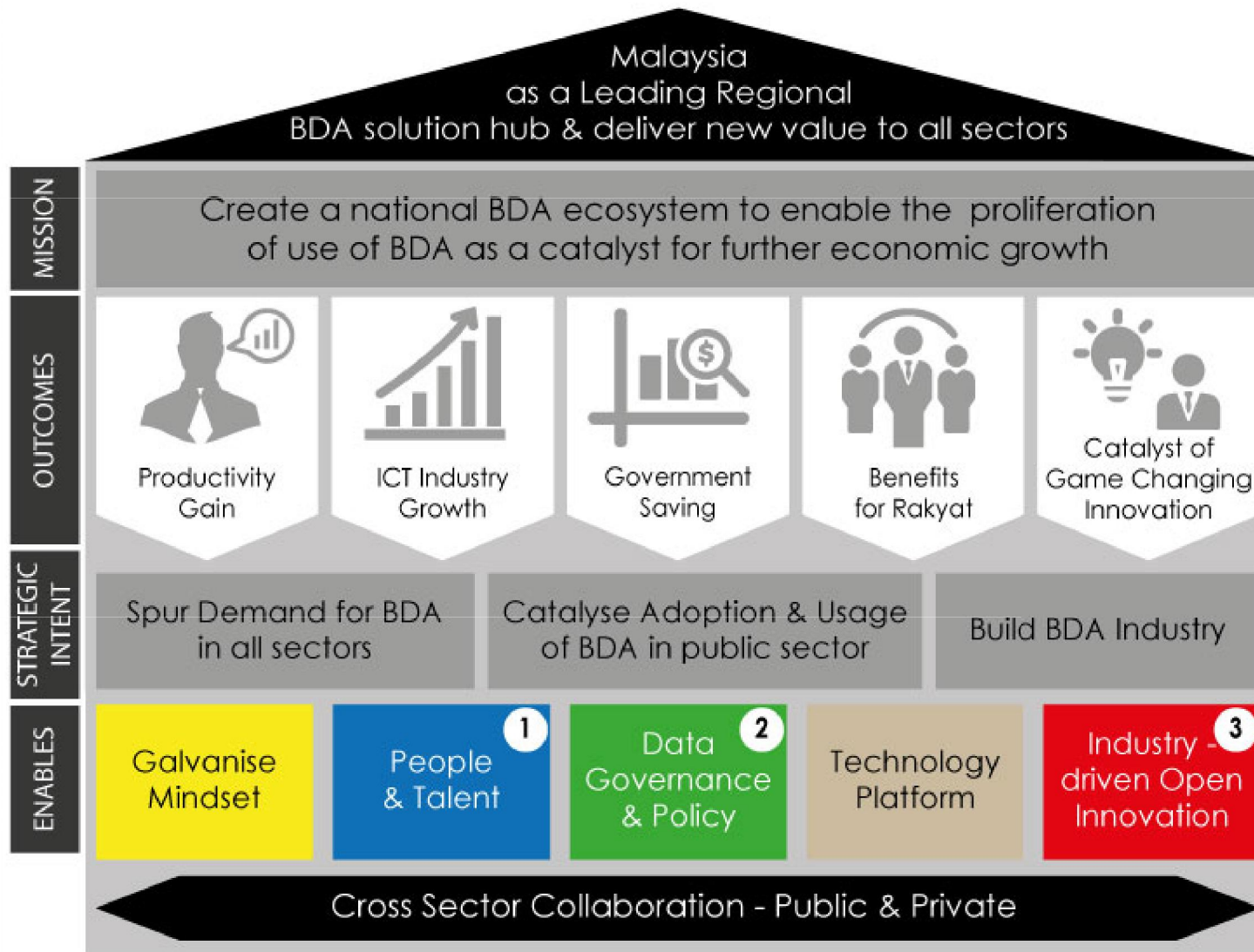
|   |   |
|---|---|
| <b>Retail</b> <ul style="list-style-type: none"><li>• Customer relationship management</li><li>• Store location and layout</li><li>• Fraud detection and prevention</li><li>• Supply chain optimization</li><li>• Dynamic pricing</li></ul> | <b>Manufacturing</b> <ul style="list-style-type: none"><li>• Product research</li><li>• Engineering analytics</li><li>• Predictive maintenance</li><li>• Process and quality analysis</li><li>• Distribution optimization</li></ul> |
| <b>Financial services</b> <ul style="list-style-type: none"><li>• Algorithmic trading</li><li>• Risk analysis</li><li>• Fraud detection</li><li>• Portfolio analysis</li></ul>  | <b>Media and telecommunications</b> <ul style="list-style-type: none"><li>• Network optimization</li><li>• Customer scoring</li><li>• Churn prevention</li><li>• Fraud prevention</li></ul>   |
| <b>Advertising and public relations</b> <ul style="list-style-type: none"><li>• Demand signaling</li><li>• Targeted advertising</li><li>• Sentiment analysis</li><li>• Customer acquisition</li></ul>                                       | <b>Energy</b> <ul style="list-style-type: none"><li>• Smart grid</li><li>• Exploration</li><li>• Operational modeling</li><li>• Power-line sensors</li></ul>  |
| <b>Government</b> <ul style="list-style-type: none"><li>• Market governance</li><li>• Weapon systems and counterterrorism</li><li>• Econometrics</li><li>• Health informatics</li></ul>   | <b>Healthcare and life sciences</b> <ul style="list-style-type: none"><li>• Pharmacogenomics</li><li>• Bioinformatics</li><li>• Pharmaceutical research</li><li>• Clinical outcomes research</li></ul>                              |

# What is Big Data Analytics?

---

**Big Data Analytics** is the process of examining large data sets containing a variety of data types - i.e. big data - to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful business information.

# NATIONAL BDA FRAMEWORK



## 3 STRATEGIC IMPERATIVES

1. Development of Data Scientists
2. Unlocking the value of government's Open Data
3. Driving industry-driven Innovation for impactful use cases

# PEOPLE & TALENT

## Track 1 : Formal University Education

|  | 2015  | 2016   |
|--|---|--|
| <b>1</b> Postgrad, Masters, PhD                                      | MMU, APU  | UiTM, UM, UUM, UIA                           |
| <b>2</b> Undergraduate degree with Data Science specialisation       | MMU, APU, UM, MONASH, SUNWAY                                  | UiTM, UTP, UMS                               |
| <b>3</b> Introducing a Data Science module to non-ICT degree courses | UiTM, USIM, UTAR<br>(starting with Actuarial Science faculty) | Roll-out to other faculties<br>i.e. Business |



MQA-Academia Dialogue Group agreed to include industry in the BDA curriculum evaluation panel.

Targeting  
**16,000**  
 Data  
 Professional  
 Including  
**2,000**  
 Data Scientist  
 to be trained by  
 the year 2020

# PEOPLE & TALENT

## Track 2 : Professional Development

### ① ENTERPRISE DATA SCIENCE (EDS) PROGRAMME



### ② HARVARD BUSINESS PROGRAM



**HARVARD  
BUSINESS SCHOOL**

Executive Education

1<sup>st</sup> ever Harvard programme conducted outside of Boston

### ③ COLLABORATION BETWEEN MDEC, HRDF & TheCADS



### ④ BLENDED MOOC DATA SCIENCE CERTIFICATION PROGRAM



1<sup>st</sup> intake: 195 participants completed the certification

2<sup>nd</sup> intake: Launched in March 2016 with current enrolment of 385 participants

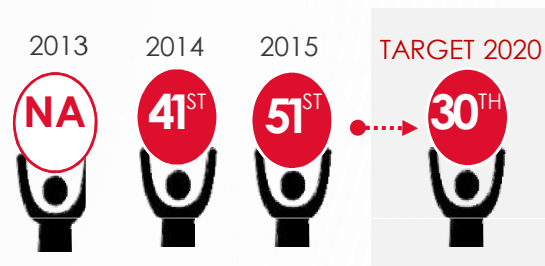
**NEW : Additional courses for Coursera Data Science Specializations introduced:**

- i. Excel to MySQL: Analytic Techniques for Business
- ii. Executive Data Science
- iii. Business Analytics

# UNLOCKING THE VALUE OF OPEN DATA



Malaysia's ranking:



Source: Open Data Barometer by WWW Foundation

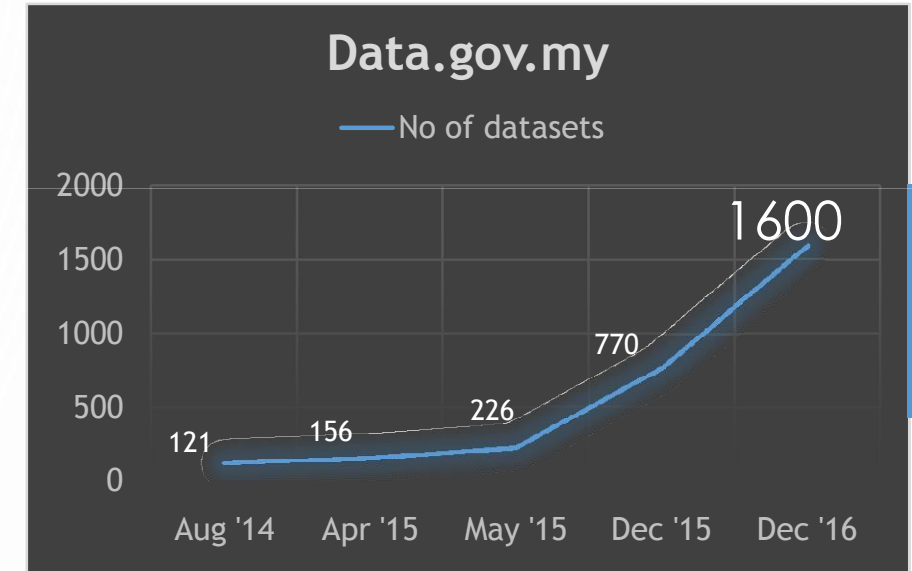
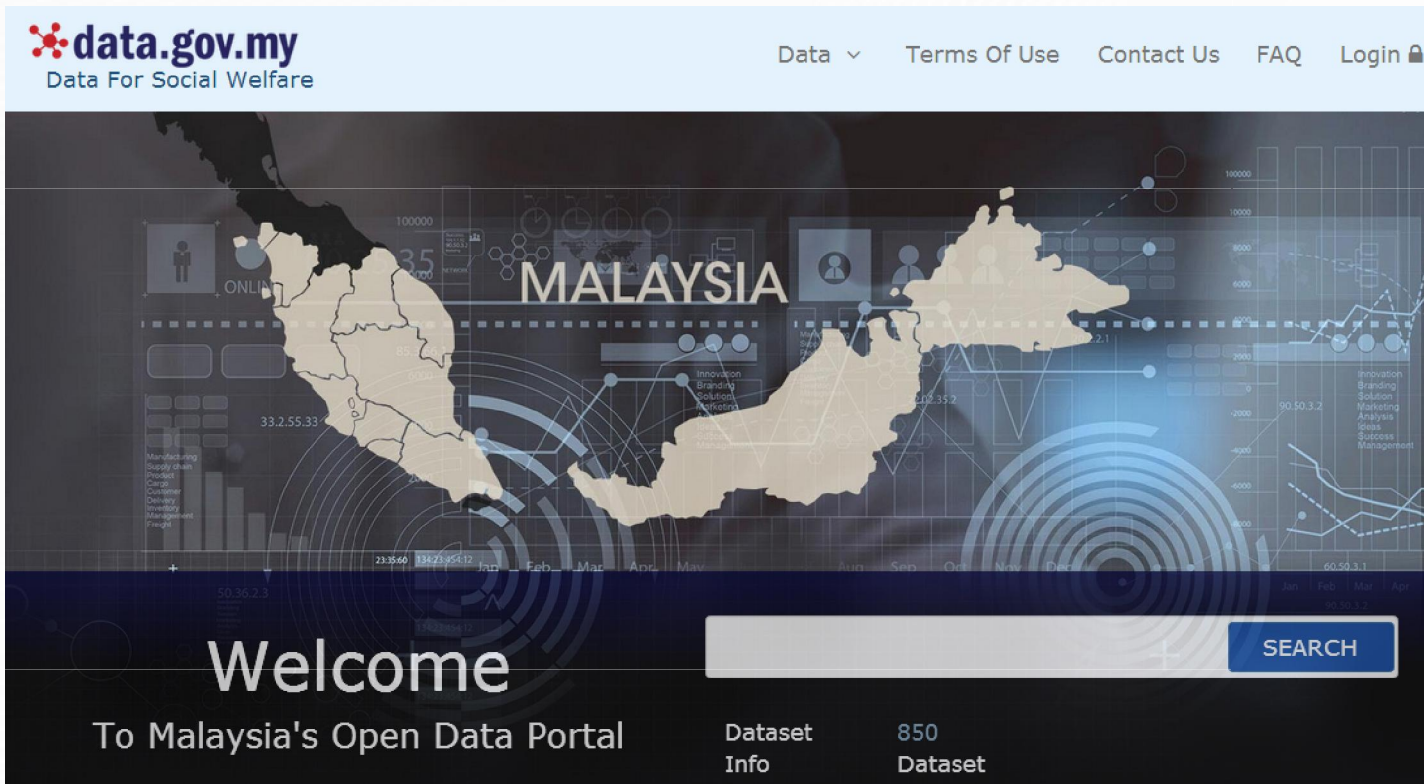
## PARTNERSHIP WITH OPEN DATA INSTITUTE, UK



Open Data Institute (ODI) Partnership witnessed by the Chief Secretary to the Government of Malaysia (KSN) on April 2, 2015

- ODI strategic partnership with MAMPU & MDEC
- 32 Open Data Champions from 13 ministries and agencies
- Open Data Guidelines for Public Sector has been developed by MAMPU and endorsed by Tan Sri KSN

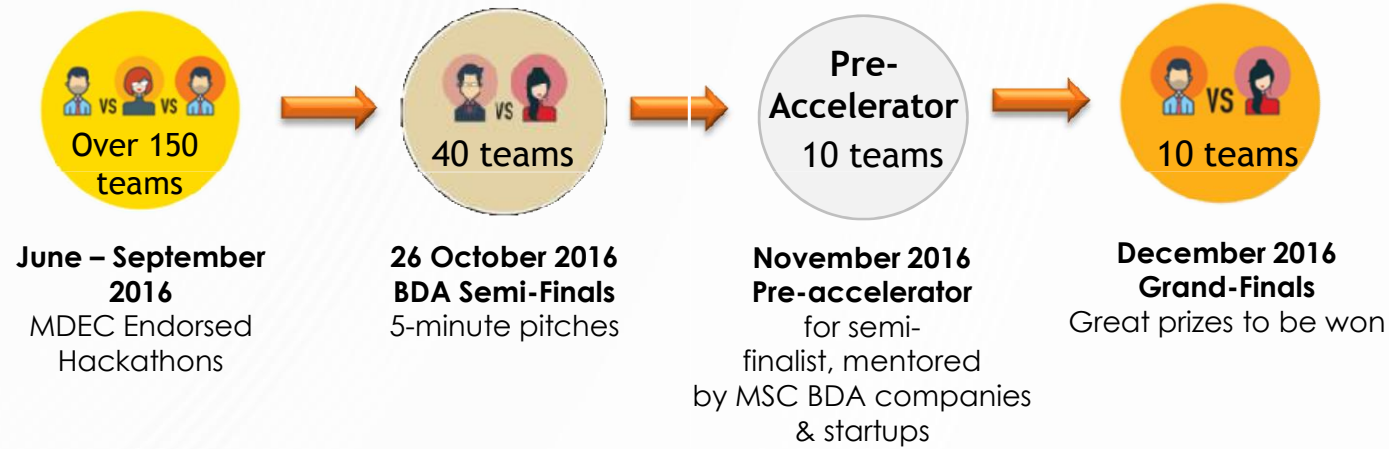
# GOVERNMENT'S OPEN DATA INITIATIVE



- Launch of data.gov.my beta version @ March 2016
- Increase number of datasets available on data.gov.my (Current : 1,463 datasets – November 2016)

# BIG APP CHALLENGE 3.0

1,000 total participants from over 200 teams so far!



## MDEC Endorsed Hackathons

- Angelhack KL 2016
- JomHack: Smart Cities with LoRa
- KDU-Quandratics
- Dreamcatcher-Fusionex-UHTM-UITM-USM-UTM
- CIMB-SAS
- NASA International Space Apps Challenge 2016



**MDEC** **BIG DATA**  
Driving Transformation **ANALYTICS**  
#mybda





**MDEC**  
Driving Transformation

# OPEN INNOVATION

Accelerating industry-driven Centres of Excellence for impactful use cases

## 4 CENTRES OF EXCELLENCE

formed with MDeC to create national high-impact BDA solutions

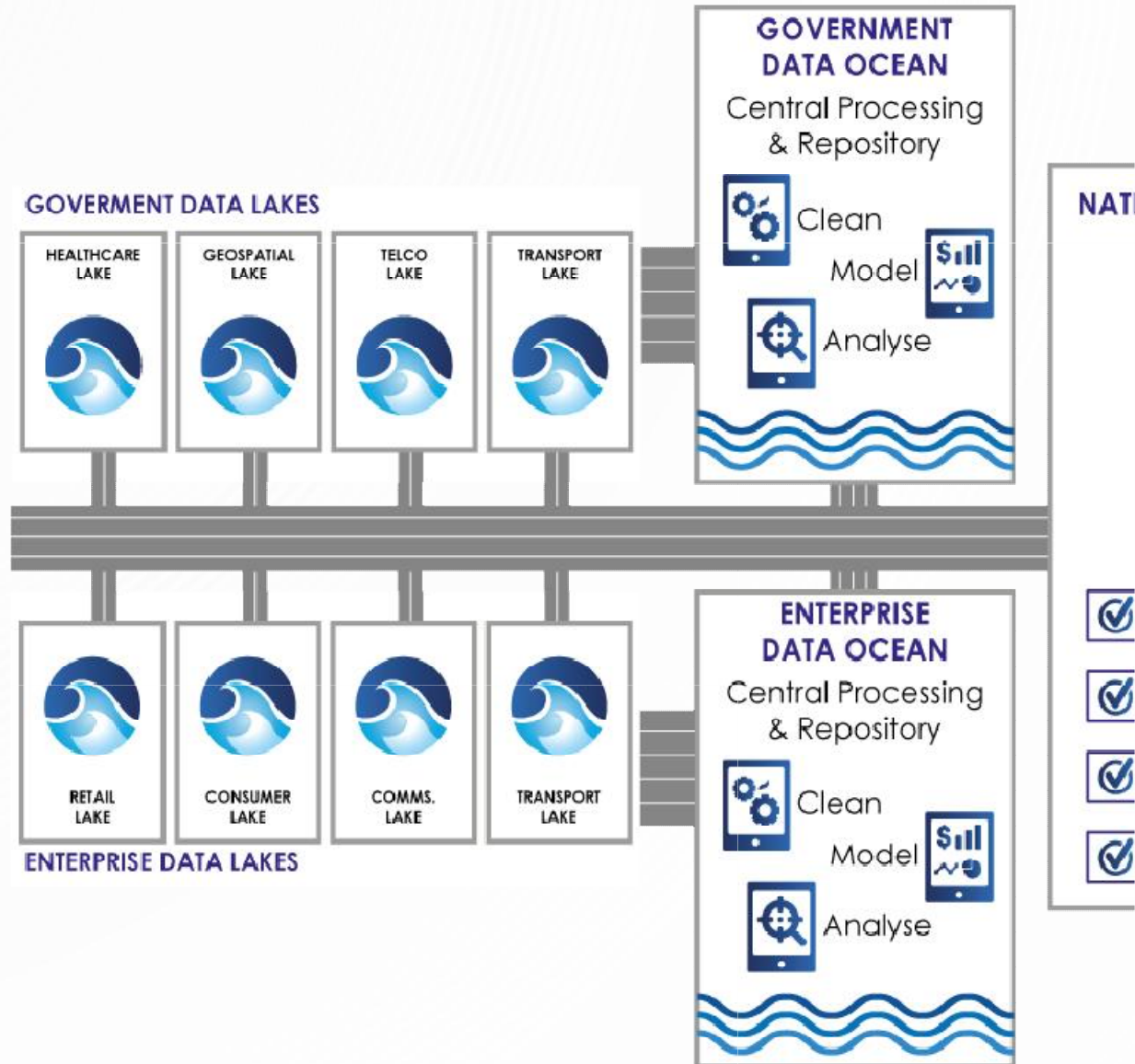
| Centres of Excellence   | PARTNERS               |
|---|------------------------|
|    | JAKIM, NAHRIM ,<br>MoF |
|    | CIMB, MoH              |
|  | MAHB, Intel            |
|  | Western Digital        |

## Some of the BDA solutions developed:

- Extreme weather projection & visualisation
- Sustainable budget & optimisation of the nation's financial health
- Monitoring and detection of potential threats to the nation
- Dengue hotspot prediction
- Smart manufacturing
- Increased bank revenue via customer spending behaviour analysis
- Increased retail revenue

# NATIONAL DATA OCEAN PLATFORM

To promote public & private data sharing over a national data platform, which will offer services such as Data Brokerage, Demand-driven Data requests and Data Analytics as a Service



# BIG DATA WEEK ASIA 2016, 19-25 SEP 2016

GALVANISE  
MINDSET

4

## RISE OF THE DATA-DRIVEN ENTERPRISE

3,500+ participants, 84 speakers, 38 exhibitors, 41 sponsors, 17 satellite events



BIGIT Technology  
Malaysia 2016



CPA Congress 2016



2nd INTERNATIONAL  
CONFERENCE ON SOFT  
COMPUTING IN DATA SCIENCE



Self-service Visualization  
For Everyone Workshop



Digital Innovation &  
Transformation



How To Be A Data  
Manager



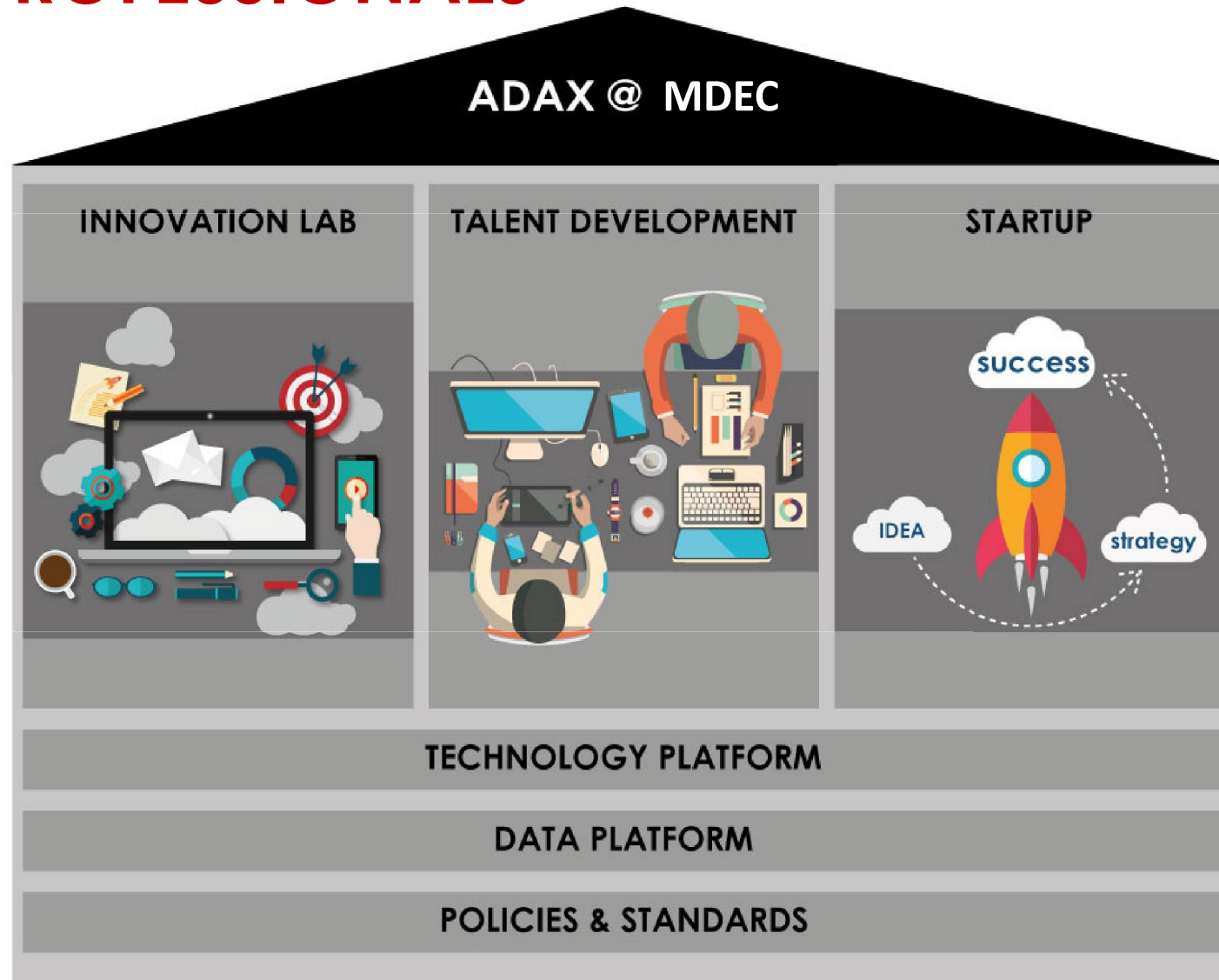
Microsoft R Workshop



Opentraffic Platform  
Training



# ASEAN DATA ANALYTICS EXCHANGE (ADAX) FOR PROFESSIONALS

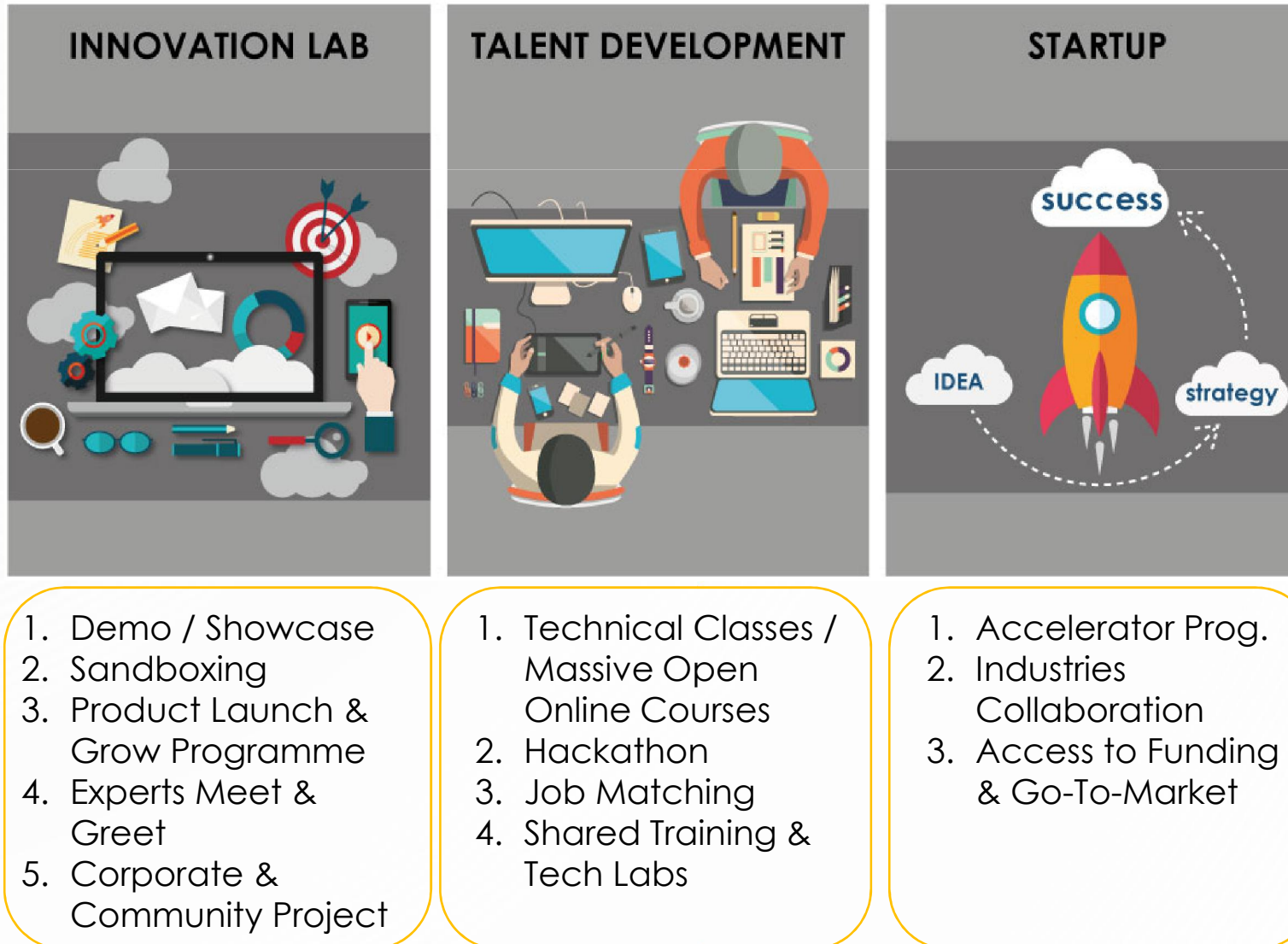


**Regional hub where MDEC brings together**

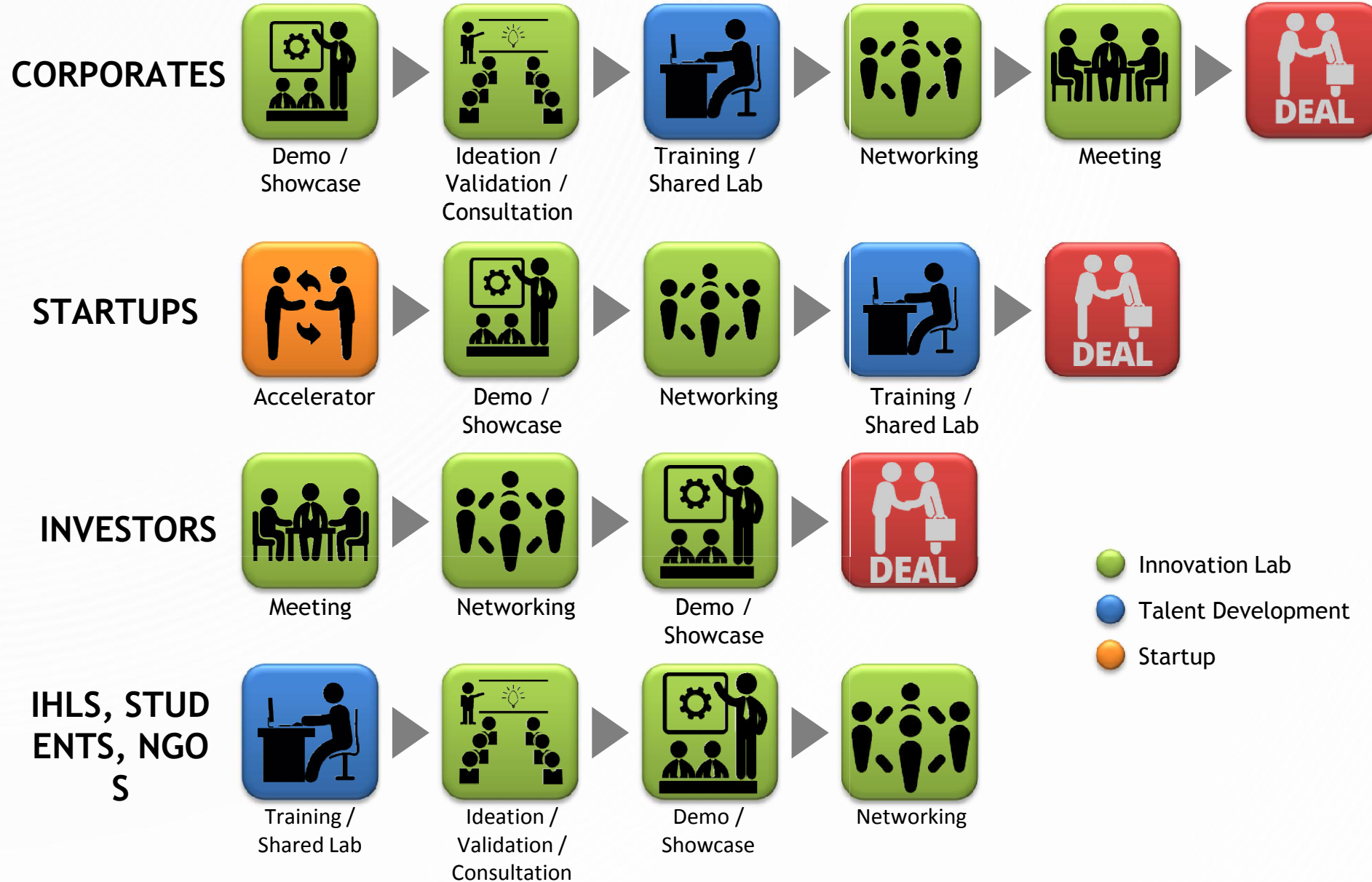
1. Innovative talent development models
2. Latest BDA technologies to be showcased
3. Use cases for ASEAN region to be piloted
4. BDA startups & accelerators in a co-working location

[ Collaborative Public-Private Partnership platform ]

# SAMPLE OF PROPOSED ADAX ACTIVITIES



# A DAY AT ADAX





MALAYSIA DIGITAL ECONOMY CORPORATION SDN BHD  
(Formerly Known as Multimedia Development Corporation Sdn Bhd)

[www.mdec.my](http://www.mdec.my)