

SICA 2018

STATISTICS, INDICES IN CONSTRUCTION
& AUTOMATION

*Berjaya Times Square Hotel
Kuala Lumpur*

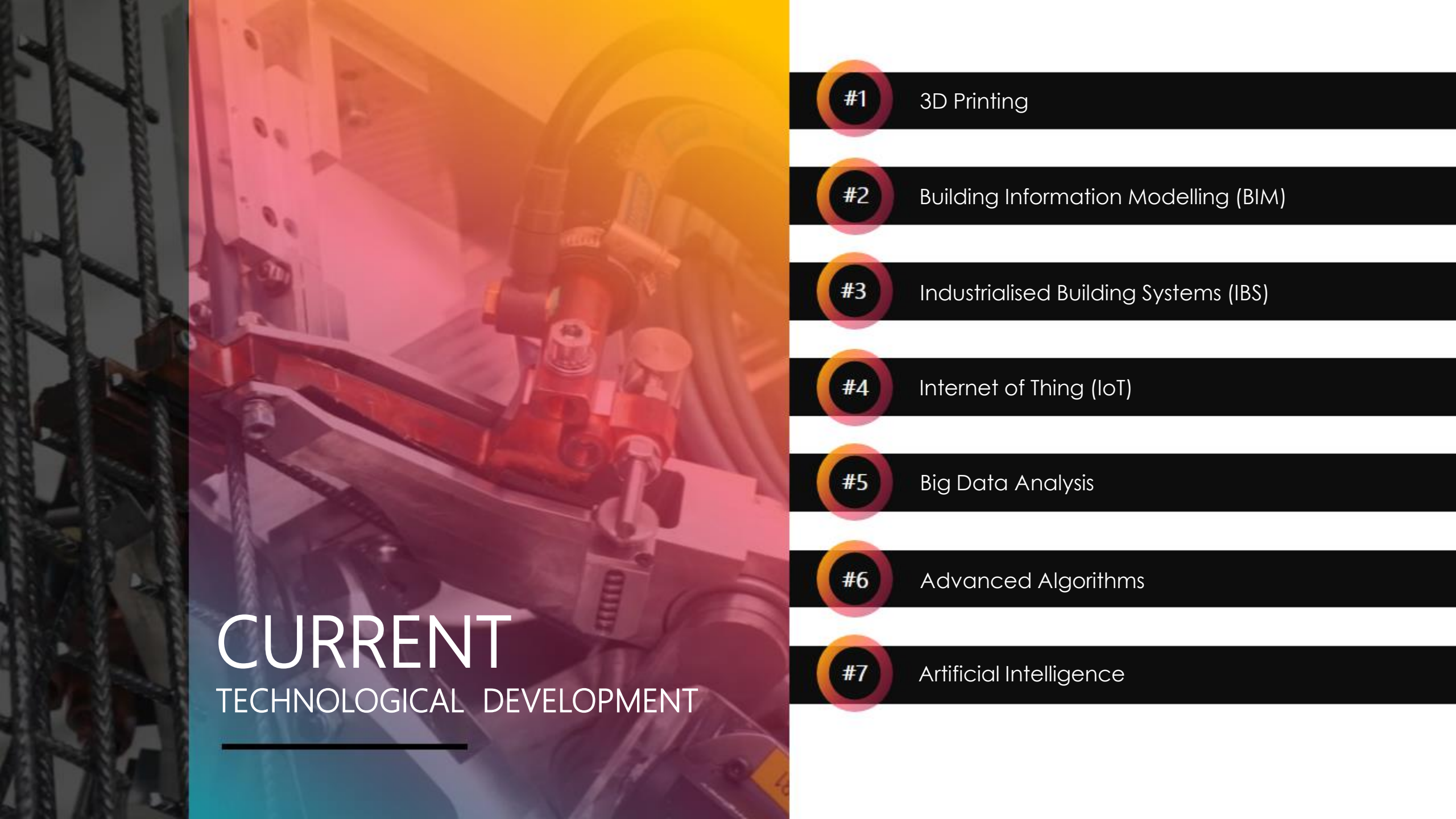
14 August 2018

KEYNOTES ADDRESS

BUILDING A BIG DATA COMMUNITY FOR CONSTRUCTION IN MALAYSIA

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Minister of Works



CURRENT TECHNOLOGICAL DEVELOPMENT

#1

3D Printing

#2

Building Information Modelling (BIM)

#3

Industrialised Building Systems (IBS)

#4

Internet of Thing (IoT)

#5

Big Data Analysis

#6

Advanced Algorithms

#7

Artificial Intelligence

BENEFITS



Better cost estimates



Increase productivity



Improve jobsite safety



Reduce business risks



Predict future outcomes on projects



Strategic decisions through data driven decision-making



LEVERAGING BIG DATA IN THE CONSTRUCTION INDUSTRY

IMPROVE WORKER PRODUCTIVITY

#1

**Invest in tracking
technology to
monitor the worker's
movement at site**

ADVANTAGE

- Raise efficiency on the worksite

#2

**Relocate tools
and materials to
make it more
accessible**

ADVANTAGE

- Maximise man-hour productivity
- Reduce accident risks
- Reduce unproductive movement
- Increase work efficiency



ISSUES & RECOMMENDATION



ISSUES IN CONSTRUCTION INDUSTRY

- Data is only filed and saved within organisation archives
- Data accessibility - Due to security and confidentiality
- Data produced in silos

RECOMMENDED SOLUTIONS

- Standardise and centralised data creation
- Eliminate data silos
- Stakeholders need to be willing to share data with others
- Collaborate to create effective data-sharing ecosystem for construction sector

IDENTIFYING CONSTRUCTION TRENDS WITH DATA ANALYTICS

Provide project
information consistently



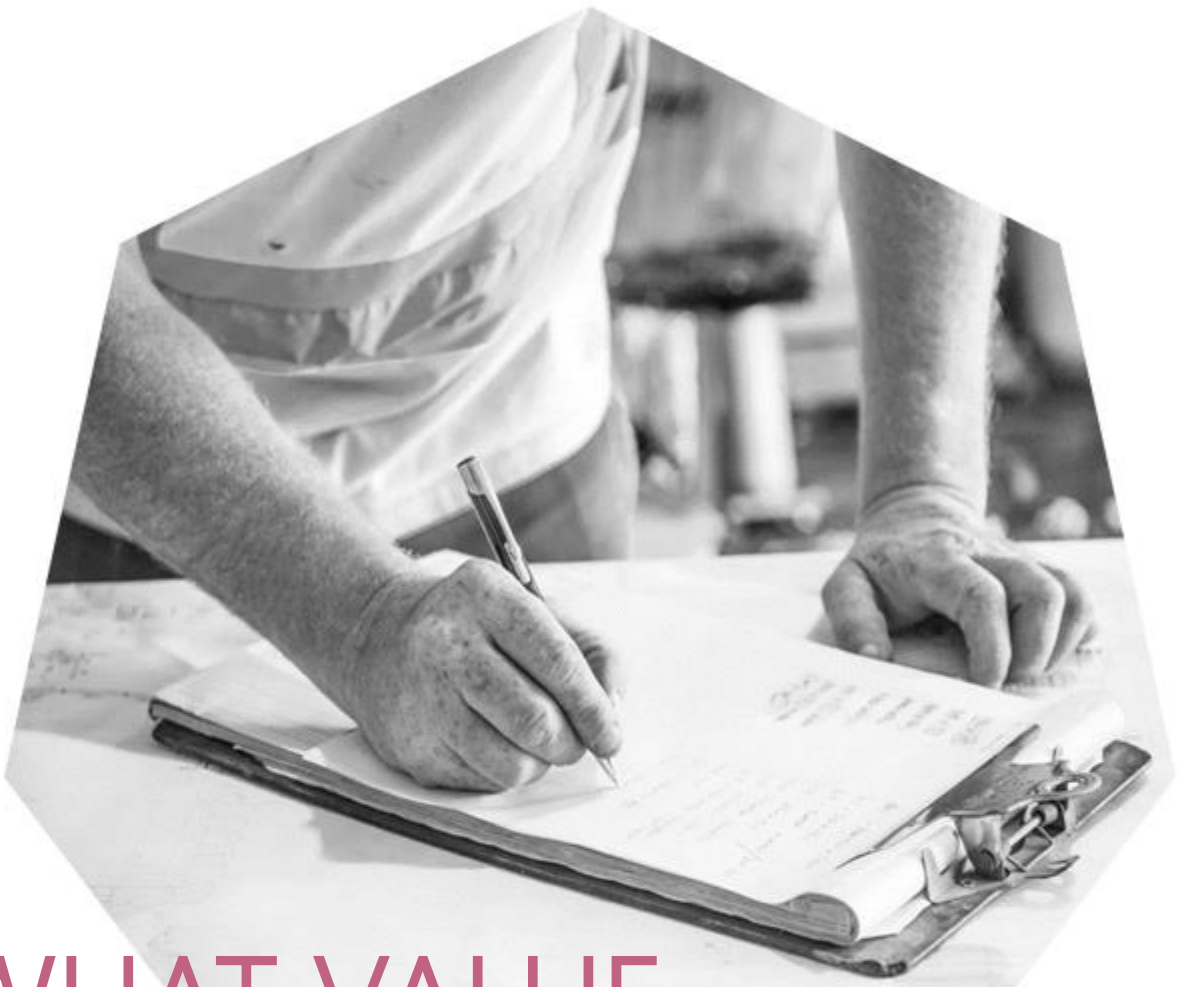
Real-time financial
project update



Improve forecast
accuracy



How Big Data Analytics solutions can provide valuable business insight?



WHAT VALUE DOES BIG DATA BRING TO CONSTRUCTION INDUSTRY?



DESIGN STAGE

Historical data can be analyzed to identify past pattern & future probabilities to improve the processes of new project, reduce risks and increase efficiency



CONSTRUCTION STAGE

An analysis of traffic data, community data and business activity data can provide the basis of a construction schedule that minimise public disruption



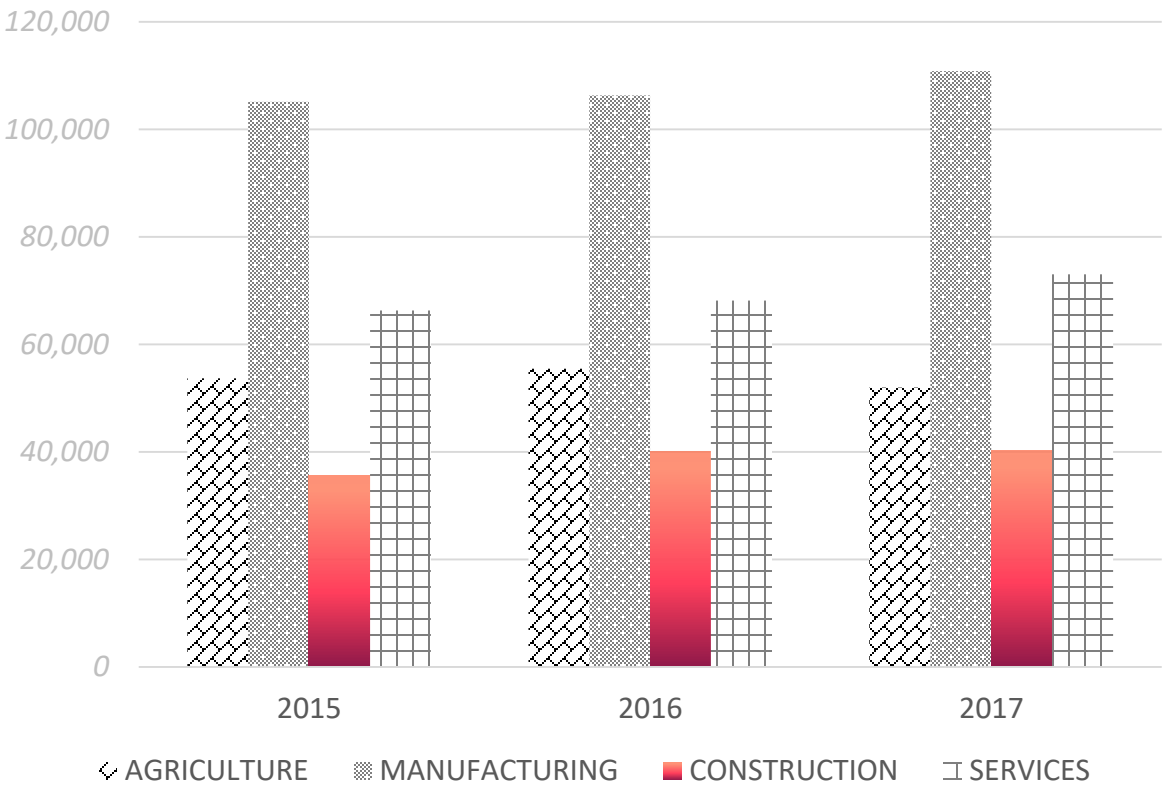
OPERATION STAGE

- Sensor built into building/ infrastructure to monitor the performance of construction
- Energy consumption can be tracked
- Data can be fed back into BIM to schedule maintenance activities



LABOUR PRODUCTIVITY PERFORMANCE

MAIN ECONOMIC SECTOR	AMOUNT (RM)		
	2015	2016	2017
AGRICULTURE	53,676	55,485	51,988
MANUFACTURING	105,138	106,307	110,858
CONSTRUCTION	35,601	40,018	40,242
SERVICES	66,328	68,166	73,030





www.citp.my

CONSTRUCTION INDUSTRY TRANSFORMATION PROGRAMME (CITP) 2016-2020

Driving Construction Excellence Together

The CITP is Malaysia's national agenda to transform the construction industry from 2016 to 2020 with aims to transform the construction industry through four strategic thrusts : Quality, Safety and Professionalism, Environmental Sustainability, Productivity and Internationalisation.



**THRUST 1 :
QUALITY, SAFETY &
PROFESSIONALISME**

Quality, safety and professionalism to be ingrained in industry culture



**THRUST 2 :
ENVIRONMENTAL
SUSTAINABILITY**

Malaysia's sustainable construction to be a model for the emerging world



**THRUST 3 :
PRODUCTIVITY**

More than doubling productivity, matched by higher wages



**THRUST 4 :
INTERNATIONALISATION**

Malaysian champions to lead the change locally and globally



INITIATIVES UNDER THRUST 1 : **QUALITY, SAFETY & PROFESSIONALISME**

- Q1** Increase emphasis on quality and implement quality assessments
- Q2** Improve workplace safety and workers' amenities
- Q3** Improve ease of doing business by addressing regulatory constraints
- Q4** Promote and raise awareness of CITP initiatives
- Q5** Enhance integrity and increase governance



INITIATIVES UNDER THRUST 3 : **PRODUCTIVITY**

- P1** Continue investment in human capital development in construction
- P2** Enhance control and balance of workforce supply
- P3** Accelerate adoption of IBS, mechanisation and modern practices
- P4** Roll out technology advantage across project life-cycle
- P5** Enhance availability of strategic information via NCIC
- P6** Advance SME / Bumiputera capacity and capability-building



INITIATIVES UNDER THRUST 2 : **ENVIRONMENTAL SUSTAINABILITY**



- E1** Drive innovation in sustainable construction
- E2** Drive compliance to environmental sustainability ratings and requirements
- E3** Focus on public projects to lead the charge on sustainable practices
- E4** Roll out technology facilitate industry adoption of sustainable practices
- E5** Reduce irresponsible waste during construction

INITIATIVES UNDER THRUST 4 : **INTERNATIONALISATION**



- I1** Internationalise construction practices and standards
- I2** Strengthen access to financing for Malaysian champions going abroad
- I3** Support consortia formation and strengthen overseas market intelligence
- I4** Intensify contractor's capacity and capability building
- I5** Elevate the Usage of Malaysian Construction Resources in Local & Overseas Projects

CROSS-AGENCY DATA SHARING

INTER-AGENCIES DATA SHARING

- CIDB in SICA Forum 2016

STRATEGIC COLLABORATIONS

- Memorandum of Understanding (MoU) with Khazanah Research Institute (KRI)
- Memorandum of Agreement (MoA) with the Royal Institution of Surveyors
- Collaboration with the Department of Statistics Malaysia (DOSM) - Develop, maintain and share updated statistical data on construction material prices.

NATIONAL CONSTRUCTION COST CENTER (MyN3C)

The National Construction Cost Centre or N3C is a key initiative undertaken by CIDB to fulfill one of CIDB's functions under Part II, Section 4(1)(e) and (h) of Act 520 that is **to provide consultancy and advisory services with respect to the construction industry** and **to initiate and maintain a construction industry information system**.





NCIIC

Expected
Launching In :

2019

NATIONAL CONSTRUCTION INDUSTRY INFORMATION CENTRE

NCIIC aims to make available strategic information on construction industry through integration with different sources of information. The information released can be used to facilitate policy formulation, Strategic planning, investment decision, Scientific research and forecasting on matters related to the construction industry.

FUTURE

ACCESSIBLE
INFORMATION VIA
NCIIC

#1	Projection on material & workers	#9	Professional & consultant
#2	Construction Personnel	#10	Construction economic reports
#3	Malaysian contractors overseas	#11	IBS
#4	Upcoming construction projects	#12	QLASSIC & SHASSIC
#5	Construction cost & prices	#13	MyCESMM /MSCESMM
#6	Contractor	#14	SCORE
#7	Construction material	#15	Liberalisation
#8	Decided construction cases	#16	Projects awarded



WAY FORWARD FOR THE CONSTRUCTION INDUSTRY

Construction industry
stakeholders are urge to :

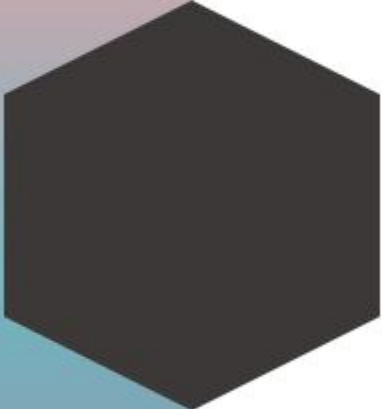
- Adopt modern technologies and processes (i.e Big Data Analytics)
- Ensure continuous growth trajectory and sustainability of the construction sector



CONCLUSION



Construction companies are beginning to focus on big data, predictive analytics and real-time data sharing



Sufficient data will contribute to successful outcomes



Necessity to adopt the latest technological advances

MOVING FORWARD

To survive and thrive in the Fourth Industrial Revolution, or Industry 4.0, it is imperative to embrace digitalisation and technological disruptions





CIDB
MALAYSIA

A large diamond-shaped graphic in the center of the slide. Inside the diamond is a black and white aerial photograph of a city, likely Kuala Lumpur, showing a complex highway interchange and surrounding urban development. Overlaid on this image is a teal-colored diamond shape, which contains the text 'THANK YOU' in white, bold, sans-serif capital letters.

**THANK
YOU**

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