

TNB-ILSAS Digital Transformation Program: Success Story

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TNB Integrated Learning Solution - ILSAS



**Impact of Industrial
Revolution 4.0**

1

**Industrial Revolution
4.0 Pillars**

2

Content

**ILSAS Digital
Framework**

3

**Digital Learning
Success Story**

4

**ILSAS Drone
Academy**

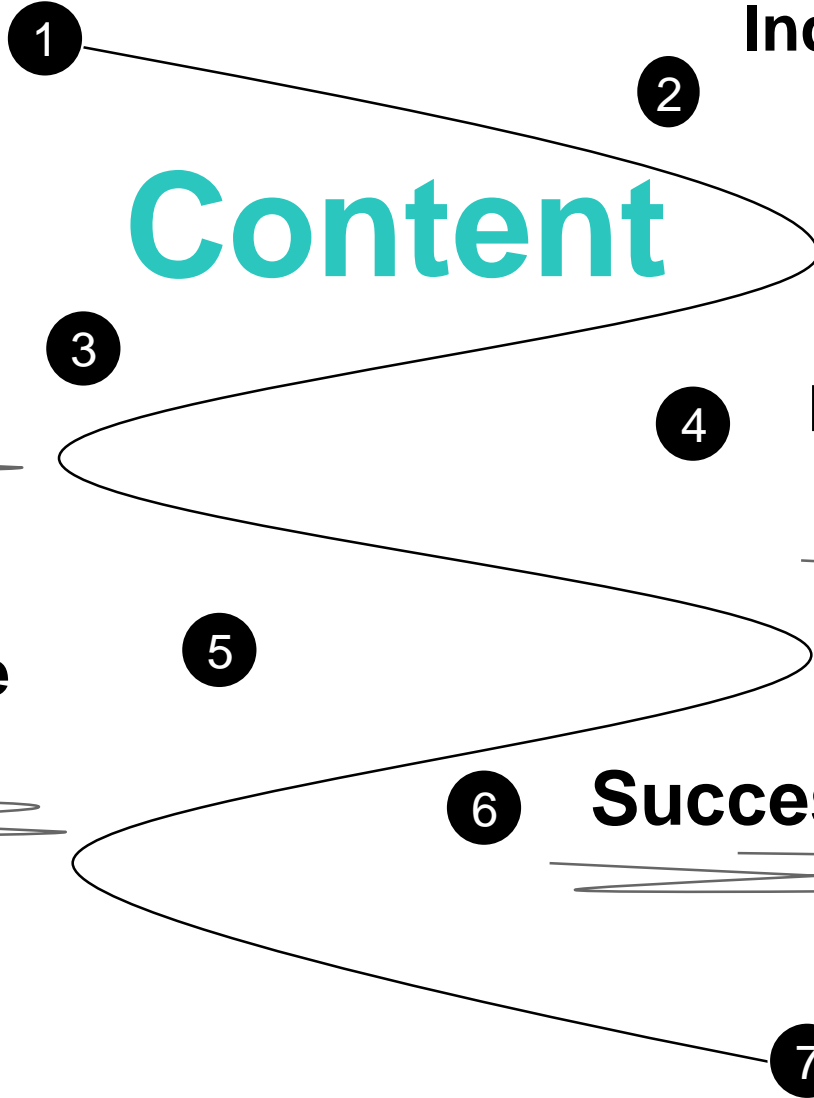
5

Success Story

6

Conclusion

7





Impact of industrial revolution 4.0

A woman with short grey hair, wearing a purple blazer over a black turtleneck, is speaking and gesturing with her hands. She is in a room with wood-paneled walls and a large window in the background. The lighting is warm and focused on her.

“It’s not about making our people job ready, it’s about making them future ready.”

Suzanne Fortier

Principal and Vice-Chancellor
McGill University Canada

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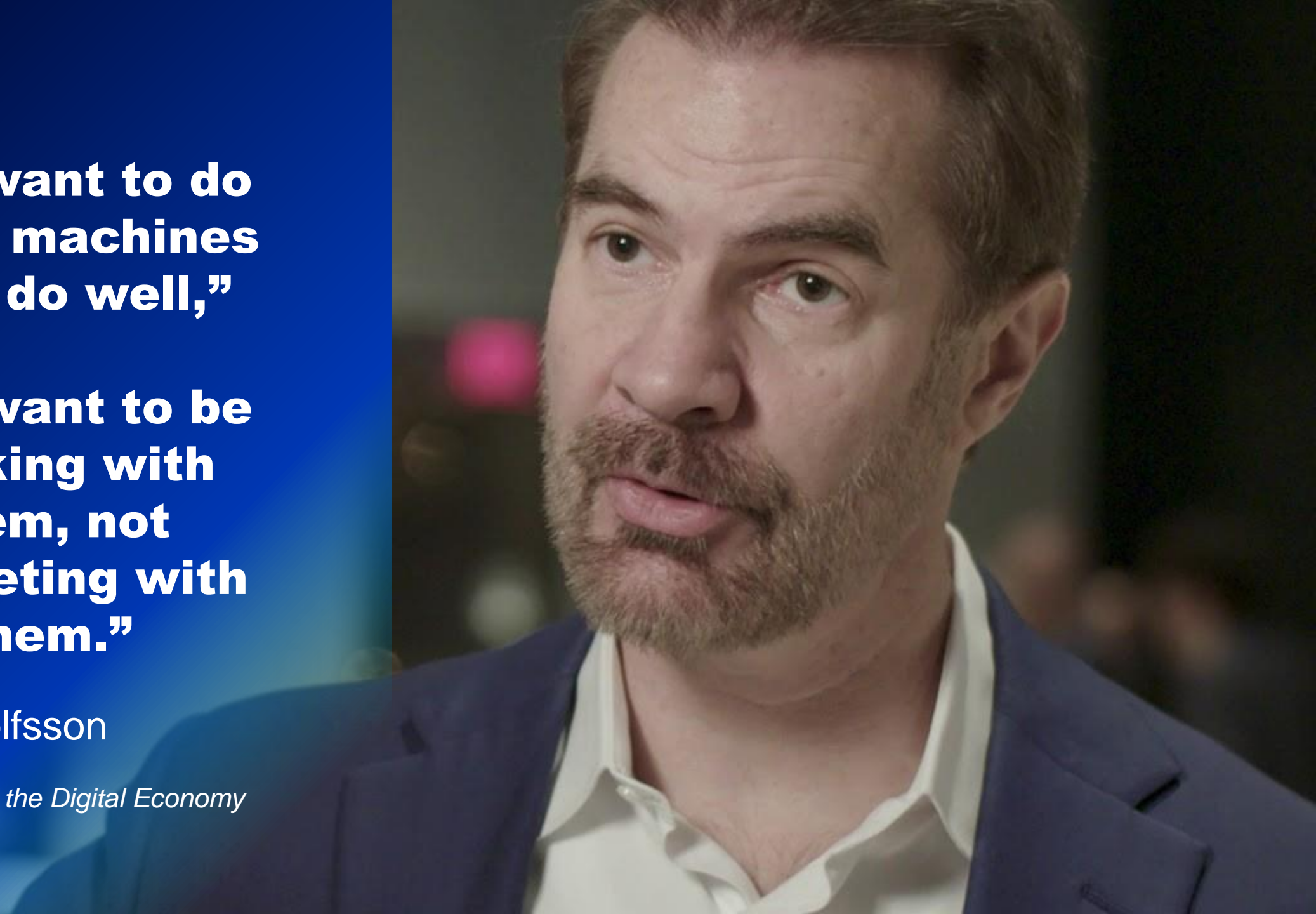
**“You want to do
things machines
can’t do well,”**

**“You want to be
working with
them, not
competing with
them.”**

Erik Brynjolfsson

Director

MIT Initiative on the Digital Economy





In the future, talent, more than capital,
will represent the critical factor of production.



There are four main effects that the Fourth Industrial Revolution has on business:

Founder and Executive Chairman of the World Economic Forum

On customer expectations

On product enhancement

On collaborative innovation

On organizational forms



Technology – state of art

Diversified group of learner

- Exec vs Non Exec
- Young vs Veteran

SITUATION

Training of
35 000 TNB
staff

Return on Investment

Company Culture

Training duration

Cost

Challenges

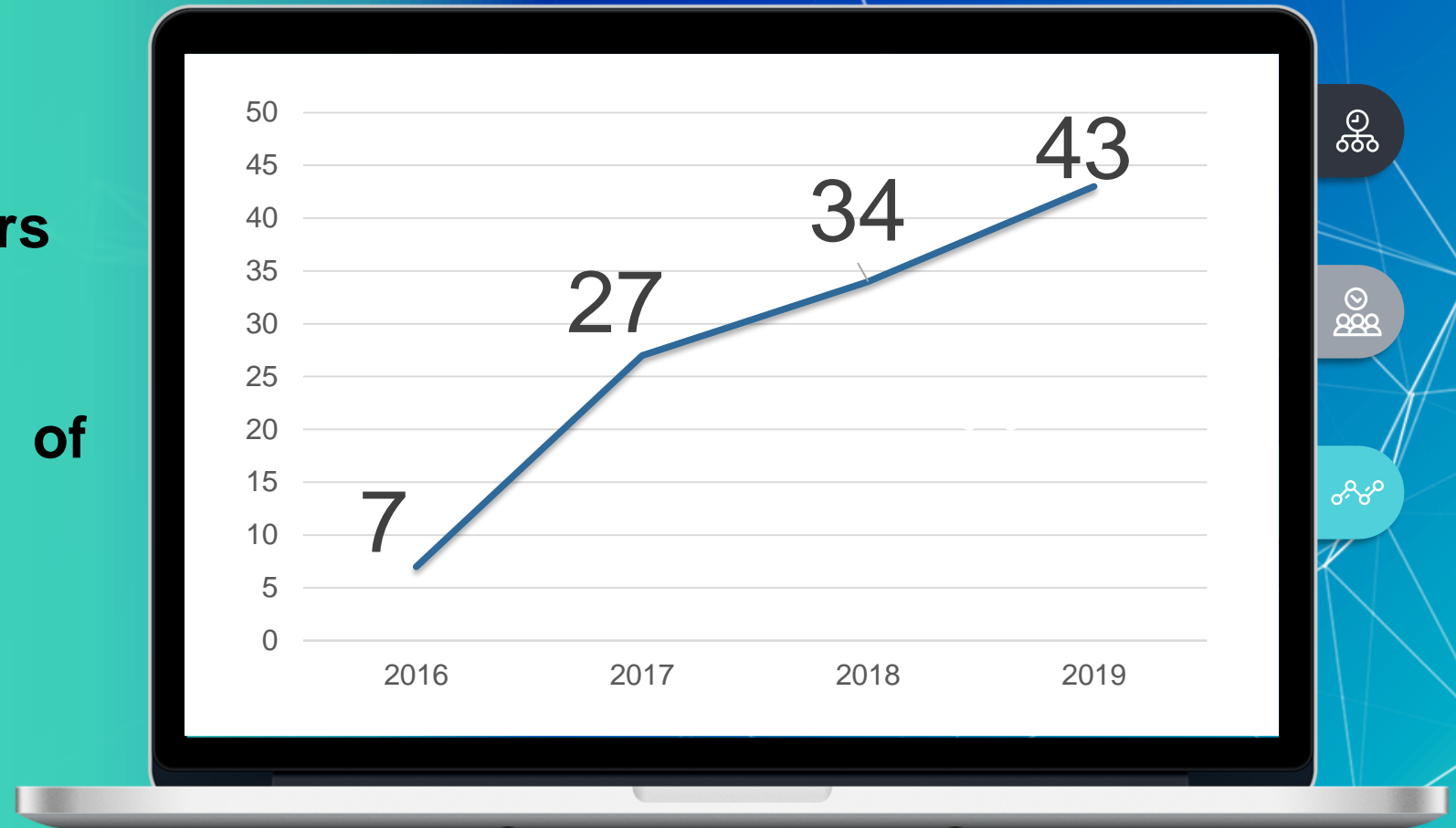


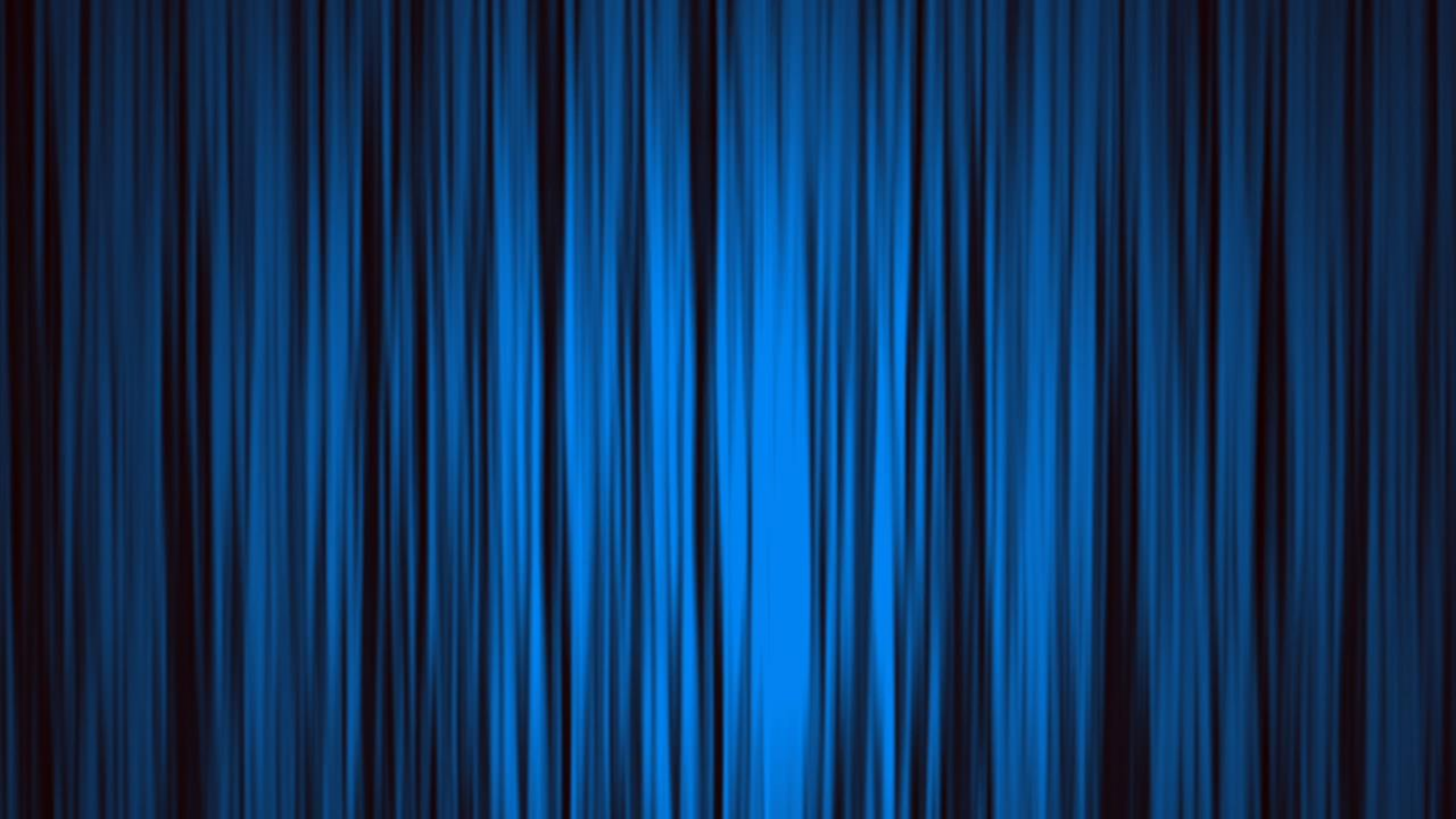


Digital Learning Success Story

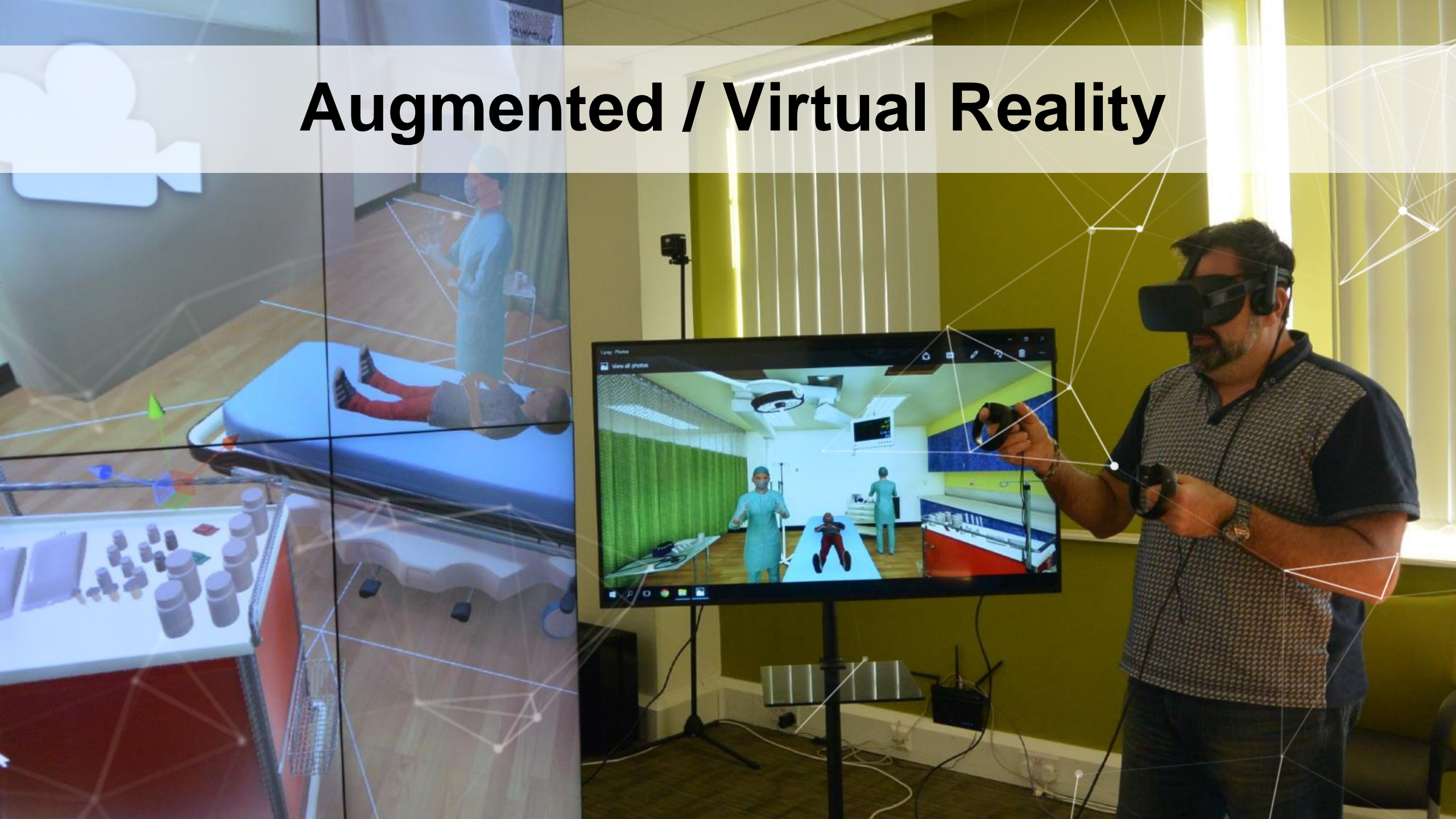
Digital Learning Success Story

- 43 Modules
- More than 28 000 users
- 85 of Customers Satisfaction Index
- Generate revenue of about RM12 Million





Augmented / Virtual Reality



2017

- ILSAS Relaxation Studio
- UNITEN Relaxation Therapy System
- AR Launching Ceremony –DCC 2.0
- Substation Development with Engineering Department

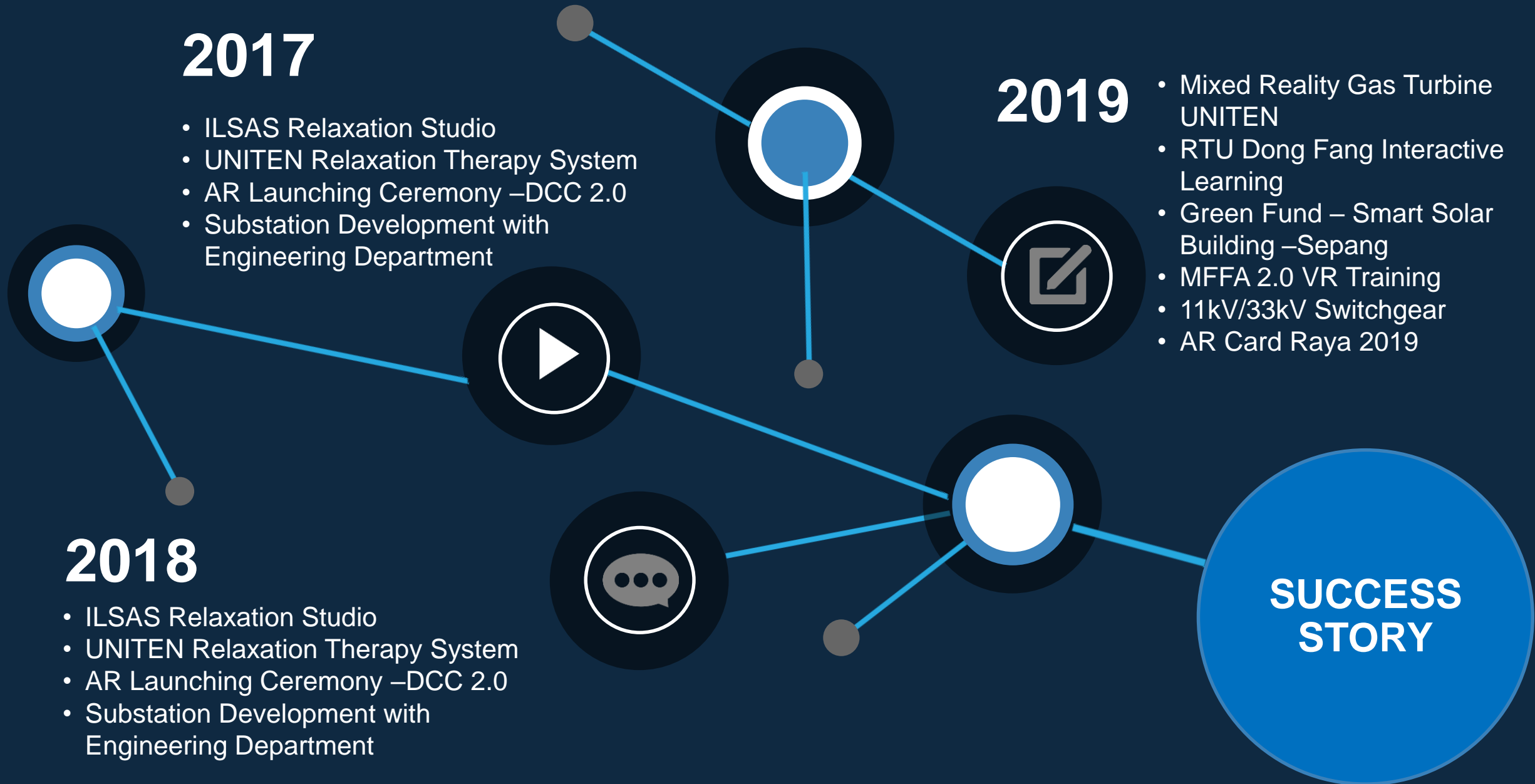
2019

- Mixed Reality Gas Turbine UNITEN
- RTU Dong Fang Interactive Learning
- Green Fund – Smart Solar Building –Sepang
- MFFA 2.0 VR Training
- 11kV/33kV Switchgear
- AR Card Raya 2019

2018

- ILSAS Relaxation Studio
- UNITEN Relaxation Therapy System
- AR Launching Ceremony –DCC 2.0
- Substation Development with Engineering Department

SUCCESS STORY





INTERNATIONAL & LOCAL

- 1 GOLD
- 6 SILVER
- 1 BRONZE
- 1 SPECIAL AWARD



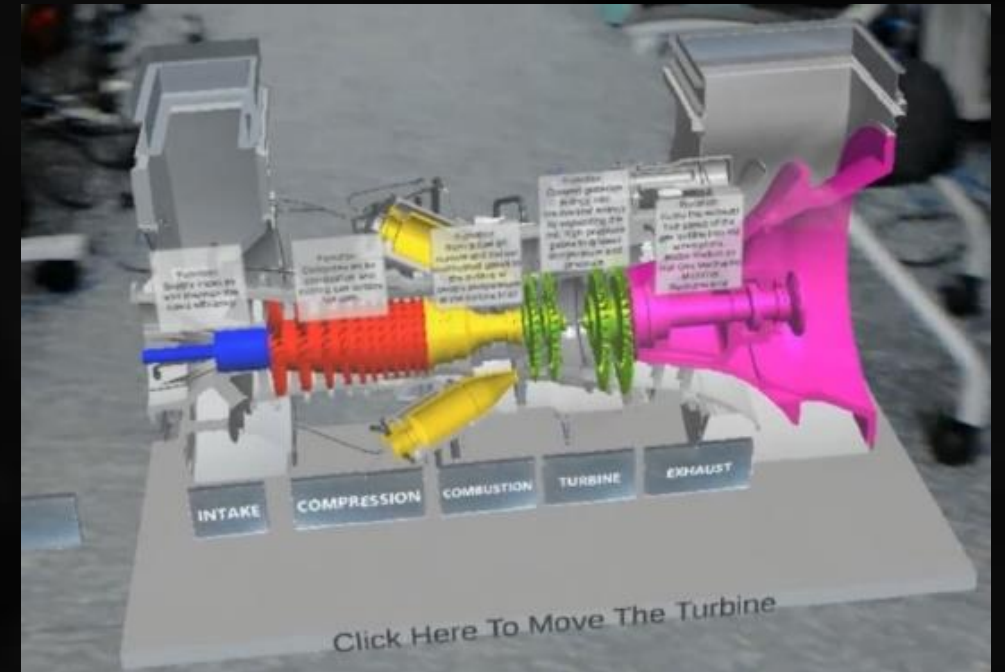
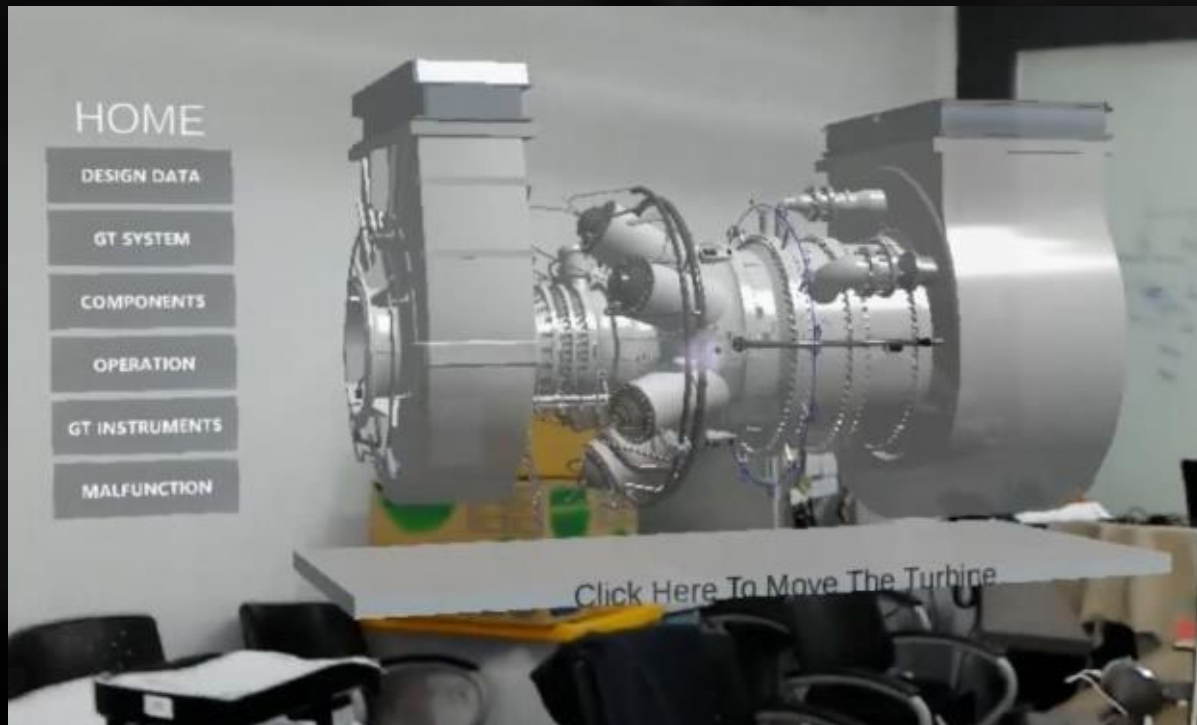
EVENT PARTICIPATION

- MIMEX
- ITEX
- CEPSE
- HRDF
- SIFF
- PERINTIS
- ARVR SINGAPORE

Achievement

HOLOGT MIXED REALITY

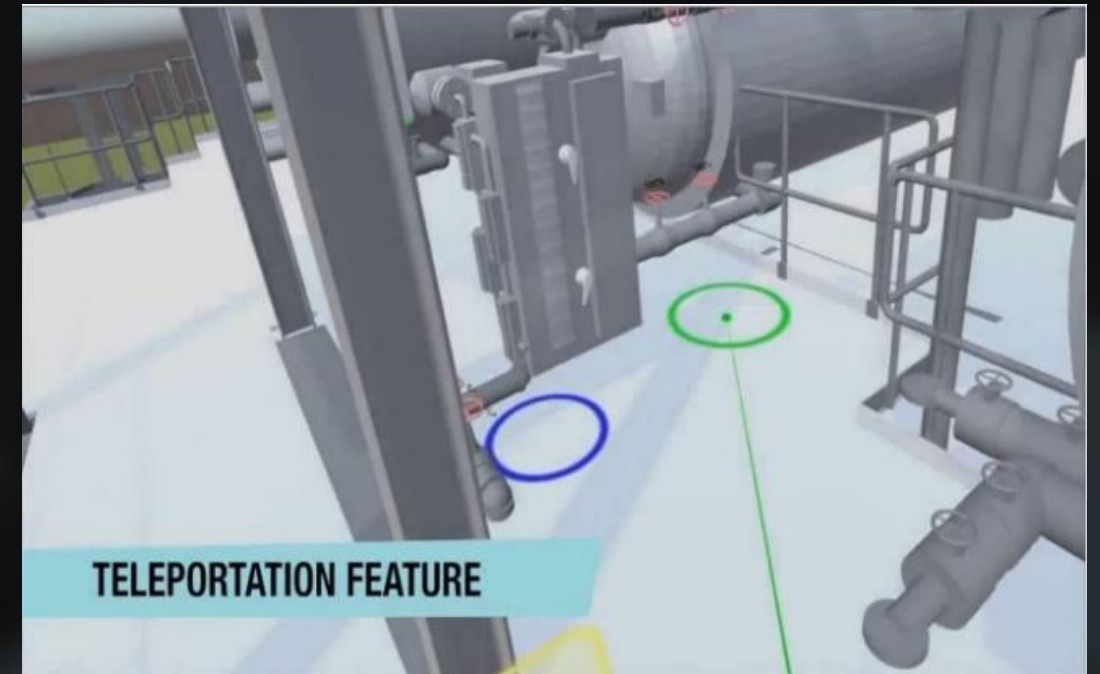
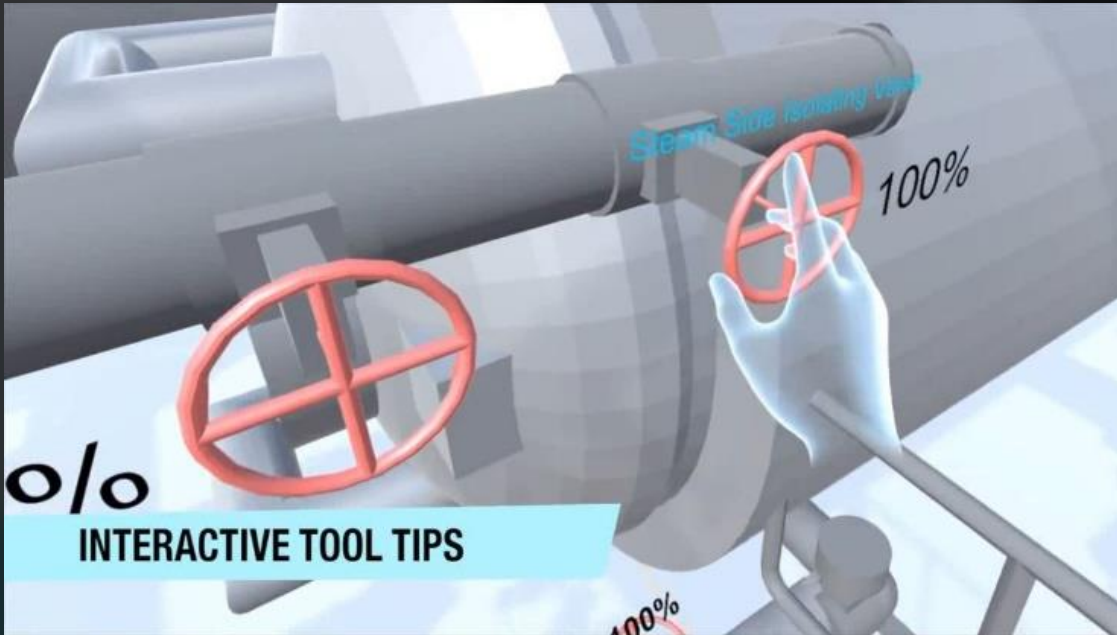
HoloGT is a Mixed Reality Introductory of generic gas turbine training module. This system was design to compare between conventional and mixed reality based learning.



HoloGT was design to assist trainer as their teaching tools. The system consist of six module of gas turbine. Ninety two power plant operator were tested using the system and the result demonstrate significant different.

VR POWER PLANT TRAINING SIMULATION

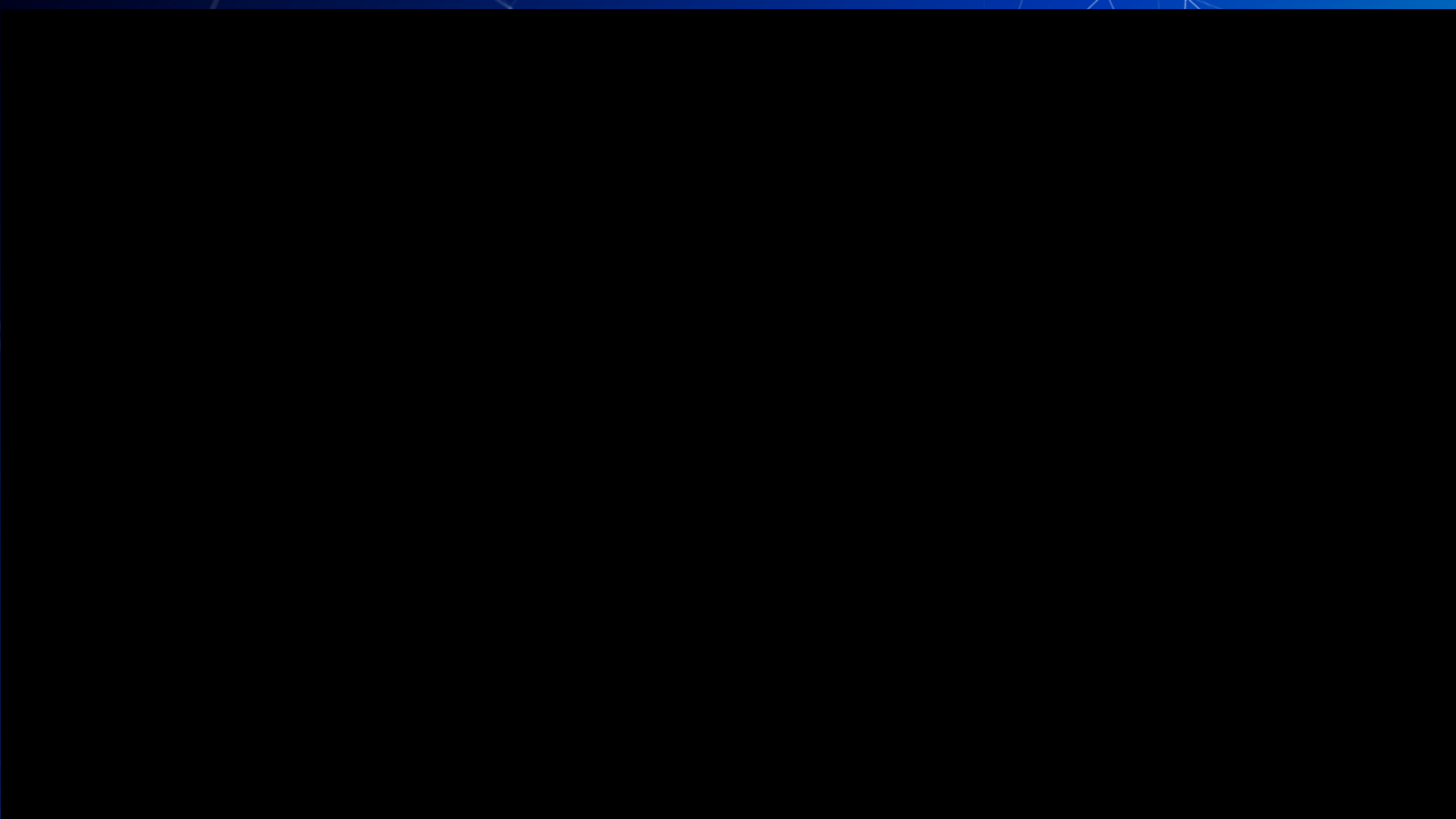
VR Power plant is the 1st course that uses VR technology for power plant.



Two model were developed: TNB Connaught Bridge and TNB Seberang Perai power station.

Augmented Reality Application







ILSAS Drone Academy

ILSAS DRONE ACADEMY was established in April 2018. Experts and representatives from private and government agencies from Bukit Aman Air Force Police (PGU), Banting Polytechnic Selangor, Department of Civil Aviation Malaysia (CAAM), Internal Security (QLD) and Qualified Pilot Operators (PPL / ATPL) were involved in setting up ILSAS Drone Academy.



ILSAS Drone Academy

ILSAS Drone Academy Objectives

1

Crafting the future of Drones industry and autonomous solution.

2

Developing a collaboration framework with Professional Drone Practitioner and other Parties to expand ILSAS Drone Academy in future.

PROJECT INVOLVEMENT

No	Project Details	Region / km	Project duration	Revenue
1.	LiDAR and Aerial Mapping services for development of transmission line 500kV & 275kV - TNBR	Ulu Perdik & Janda Baik / 24km	4 Mac – 15 Oktober 2019	RM300,000
2.	LiDAR & Bathymetric survey and Topographic Mapping Services - TNBEV	Ulu Jelai /35.55km ²	19 Jan – 19 Sept 2019	RM1,887,860
3.	Search and Rescue of Nora Anne – PDRM PGU	Seremban	9 Sept -14 Sept 2019	-
4.	Aerial Mapping and aerial Video – TNB REVD	Langkawi	16 Sept – 4 Oct 2019	RM20,000

TOTAL: RM 2,207,860

Drone Training at ILSAS Malim Nawar



14 Sessions

119 Trainees

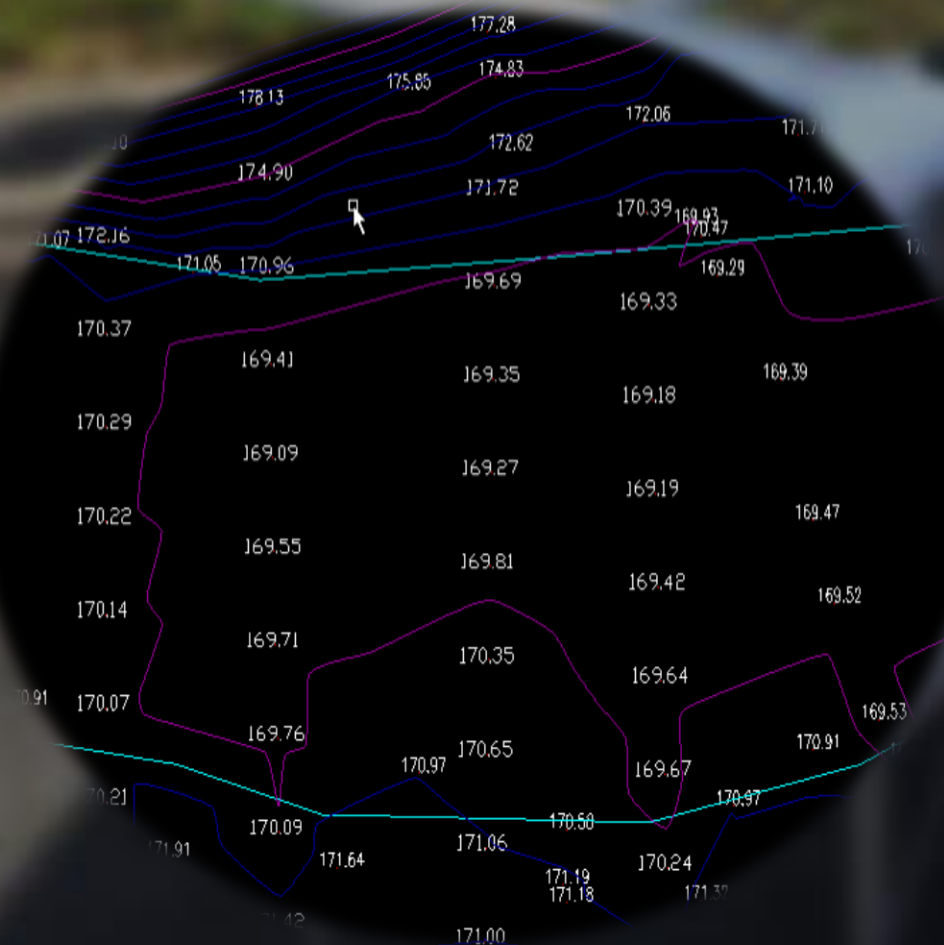
TOTAL: RM 1,500,000

SERVICES AND CONSULTATION

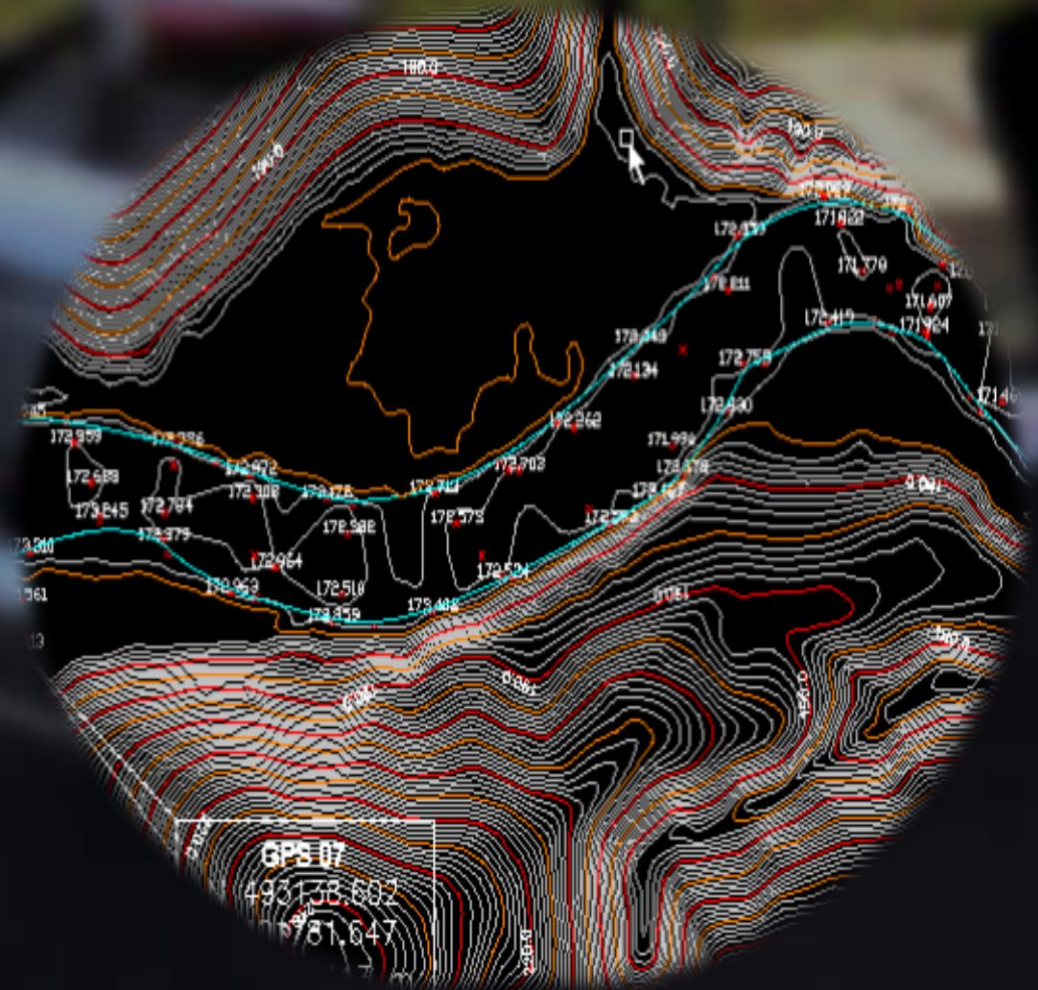


LiDAR SERVICES

Underwater Coordinate GPS



Underwater Contour



BATHY AND SONAR SERVICES



TRANSMISSION TOWER INSPECTION



SEARCH AND RESCUE



Lesson Learned / Success Story

LESSON LEARNED / SUCCESS STORY

New Technology

- 1st VR power plant training
- 1st MR turbine system
- 1st on sight monitoring using smart glass
- 1st Drone Academy for utility Industry

New Culture and Mind Set

Spin off Revenue

- CIDB Project

New Intellectual Properties (IP)

- e-learning platform
- 43 e-learning content
- Green Card (CIDB) approved E-learning course

New Branding for ILSAS

- 9 Medals from Innovation competition
- 10 conferences papers

**New Revenue stream of
RM 20 Million**

Exciting but challenging journey



CONCLUSION

Bold direction to remain competitive

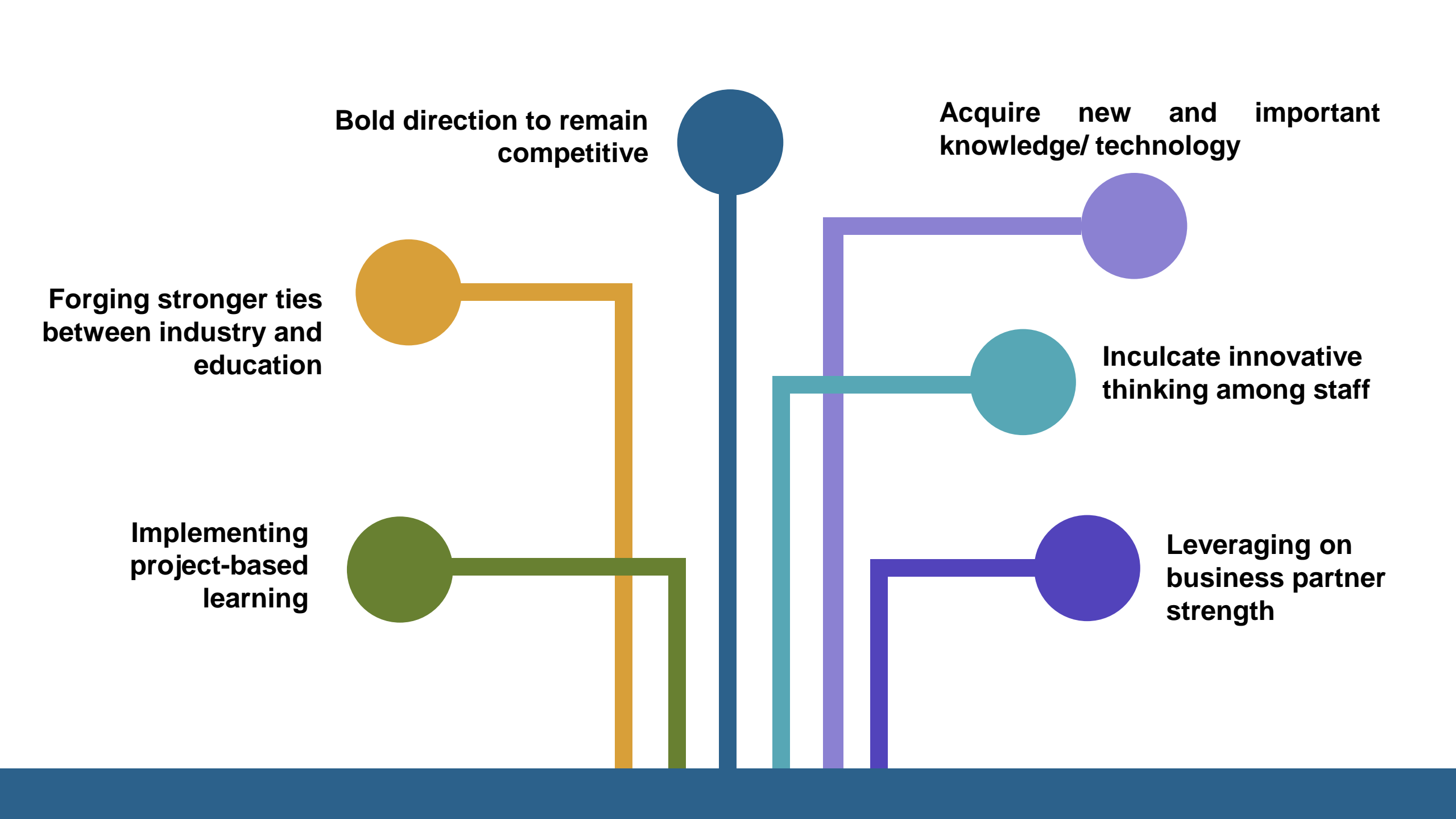
Acquire new and important knowledge/ technology

Forging stronger ties between industry and education

Inculcate innovative thinking among staff

Implementing project-based learning

Leveraging on business partner strength



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