



THE HONG KONG
POLYTECHNIC UNIVERSITY

香港理工大學

[Department of Computing](#)

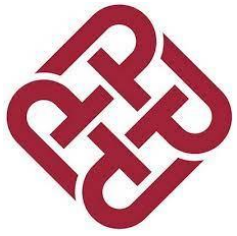
電子計算學系

COMP 3531

IT Entrepreneurship

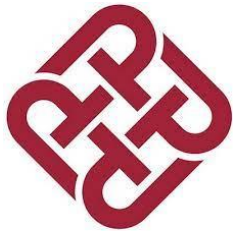
(Introduction of Lotto Lectures)

Lotto Lai
2024



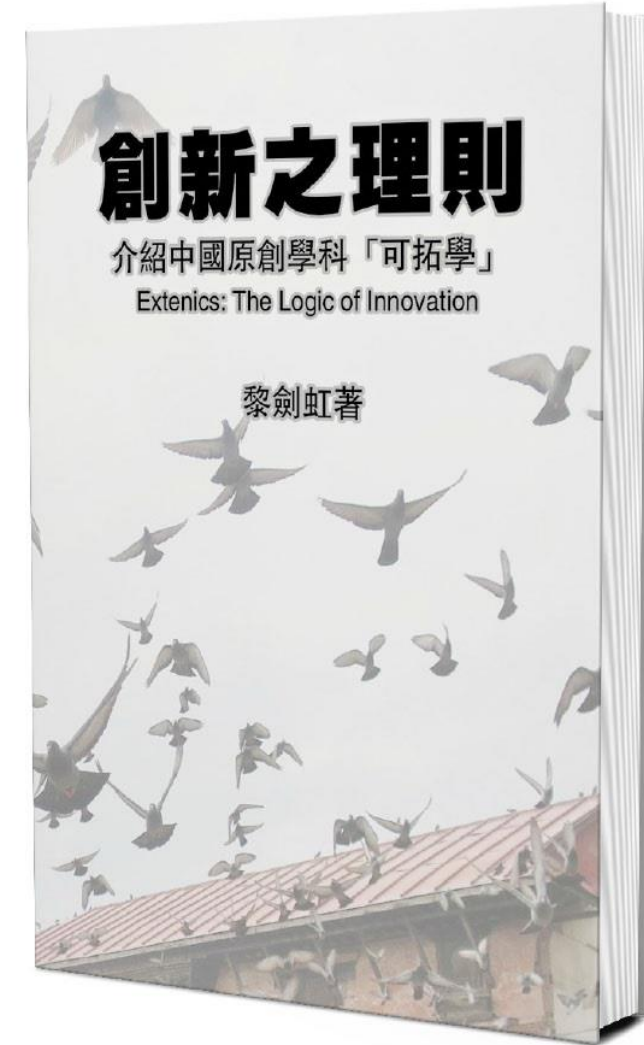
Lectures by Lotto LAI

L	Date	Topic & Subtopics	Comment and Activities
2	Jan 25	○ Extension Innovation Methodology	Lotto
4	Feb 8	○ AI & Advanced Technologies	Lotto
9	Mar 21	○ Design Thinking for Engineering	Lotto
11	Apr 6 Sat 2.30 to 5.20pm	○ Entrepreneurship Ecosystem ○ Guest Speaker	Lotto Make up class



Lecture 2: Extension Innovation Methodology

- In class exercise:
 - Practice the **4 steps Extension Innovation Method** to create a new ideas on prototype of product or service.
 - Plus Professional **Ethics** requirement as an **indispensable index**

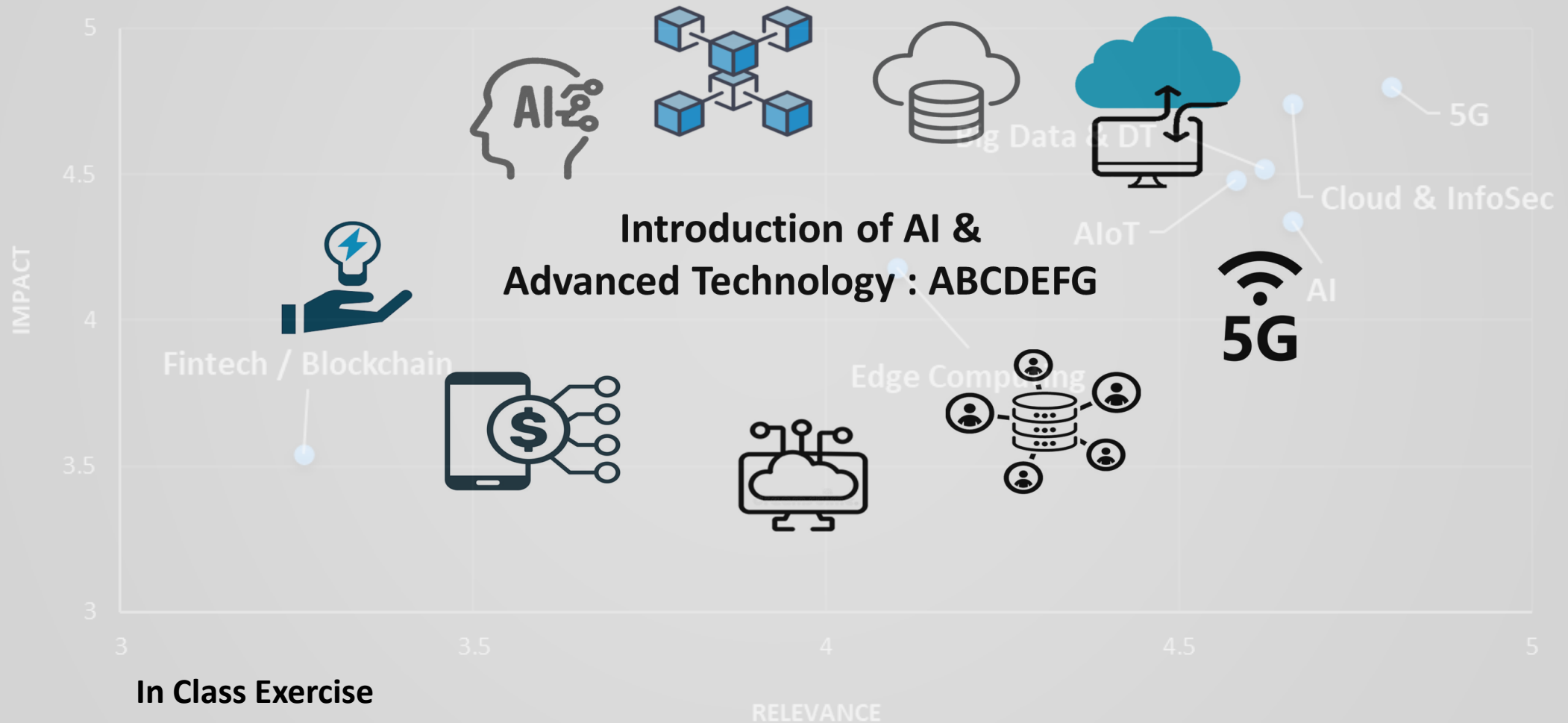


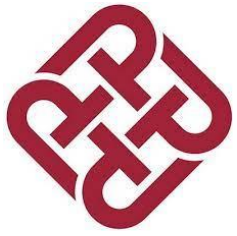
Extenics: The Logic of Innovation



Lecture 4: AI & Advanced Technologies

Advanced Technology Relevance vs Impact to Future Career

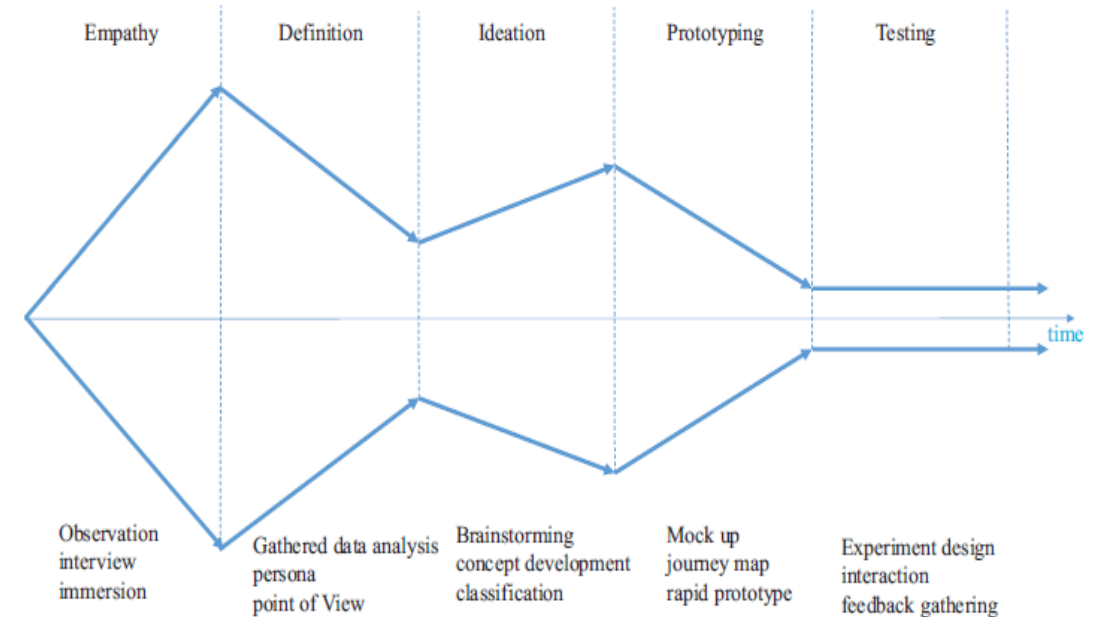


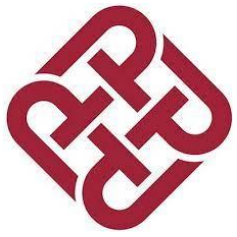


Lecture 9: Design Thinking for Engineering

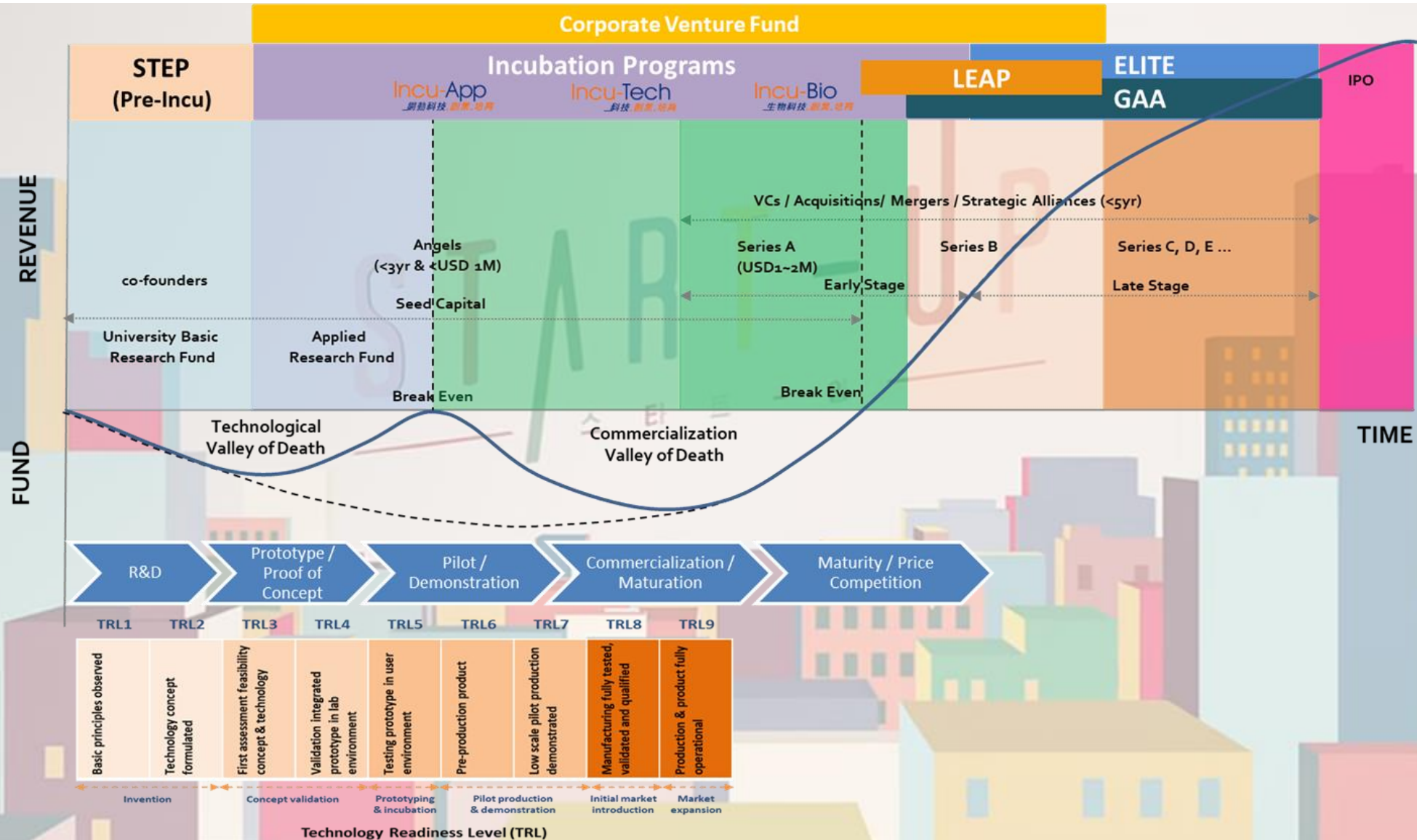
Empathize – In Class Exercise

- Participants will interview their partners to get as much information as possible about them in relation to the assigned project.
- Each member of the pair interviews the other in turns
- For the rest of the experience, each pair will have a perfectly identified A & B members.
- After the two members of each pair were interviewed, we pause for a short minute to review the responses obtained.





Entrepreneurship Ecosystem



Background & Promotion of China Original Discipline “Extenics”

“可拓學”

Dr. Lotto Lai

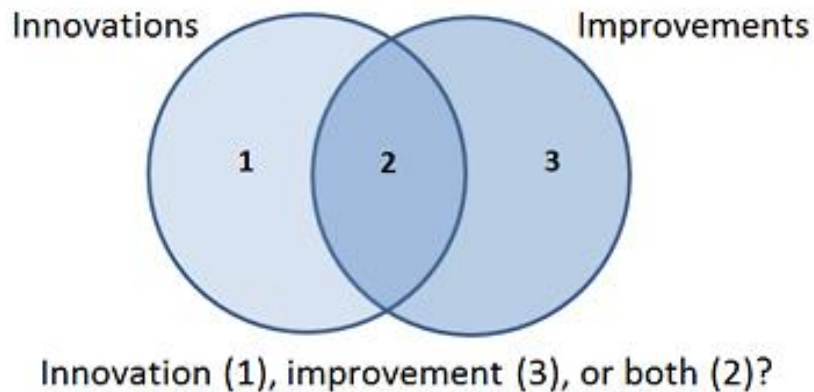
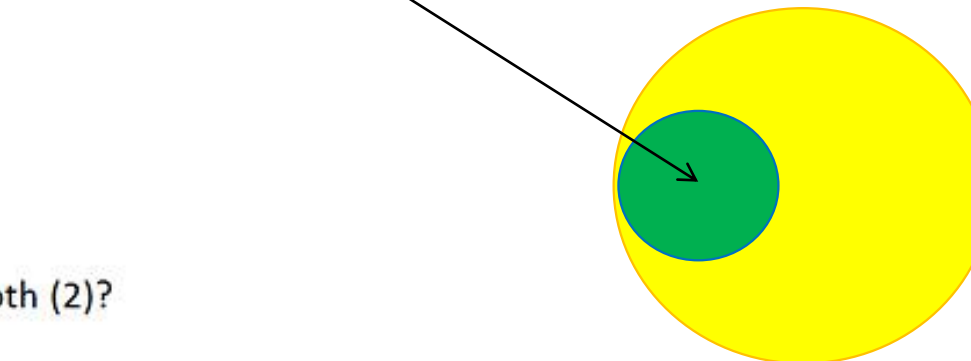
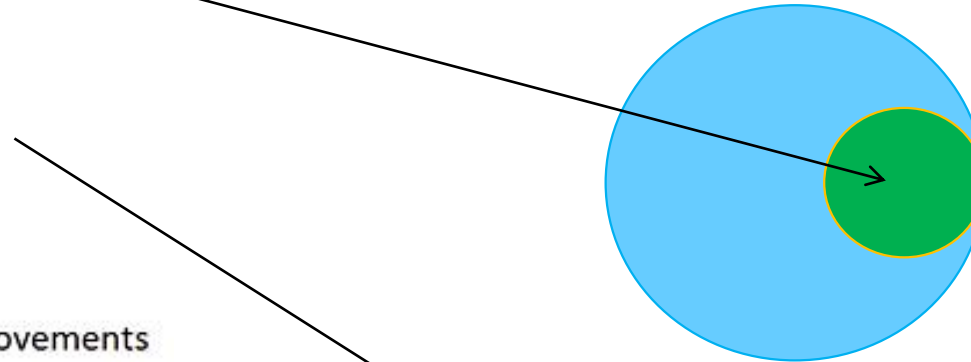
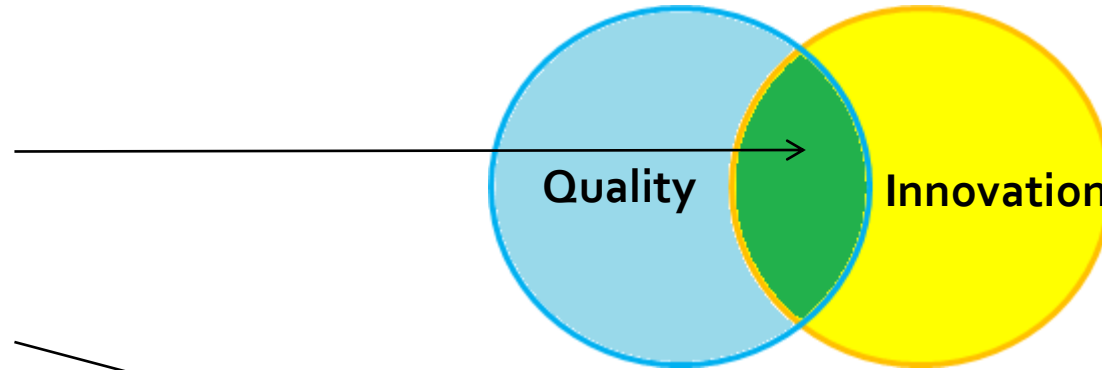
Former Chairman, Hong Kong Society for Quality



- Introduction of Quality Innovation
- Introduction of China Original Discipline “Extenics”
- Three Creative Methods
- Three Innovation Methodology
- Review Extenics activities in Hong Kong

Quality & Innovation

- Quality and Innovation
 - Green color region
- Quality Innovation
 - Innovation is subset
- Innovation Quality
 - Quality is subset



Extenics

- From 1976, Prof. Cai Wen (蔡文) started to study the law, theory and method for dealing with incompatible problems. The paper “**Extension Set and Incompatible Problem**” (可拓集合和不相容問題), which was published in **1983**, marked the birth of new science **Extenics** (可拓學) (originally called *Matter-element Analysis* (物元分析)).
- Using formal model to research the **extension possibility of things**, the rules and methods of innovation, and applying all of them **to solve contradictory problems**.

Extenics = Extension Theory + Extension Method + Extension Engineering



“Extenics: China original theory” organized by HKCIE (香港中國工程師學會), HKIE - MIE, HKSQ, TQM and SZIPS on 29 Feb 2016.



The 1st World Summit for Chinese Quality was organized by WACQ (全球華人品質聯盟(籌)), co-organized by HKSQ & SEEM, CityU on 8 July 2016. Prof. Cai Wen and Prof. Yang Chunyan gave a keynote speech named “China Original Science Subject – Extenics” (中國原創的學科可拓學).

Extenics (可拓學) Value for Participants - 拓、嚴、謙、信



- Extension (開拓), Severe (嚴謹), Modest (謙和) & Integrity (誠信) are the four values of the Extenics.

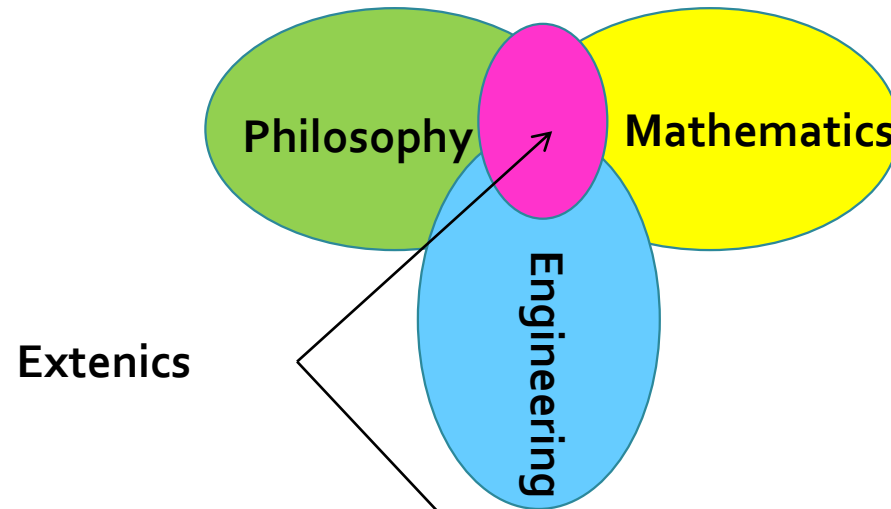


The 15th Annual Meeting of the Extenics (全國第15屆可拓學年會) on 12 Aug 2016

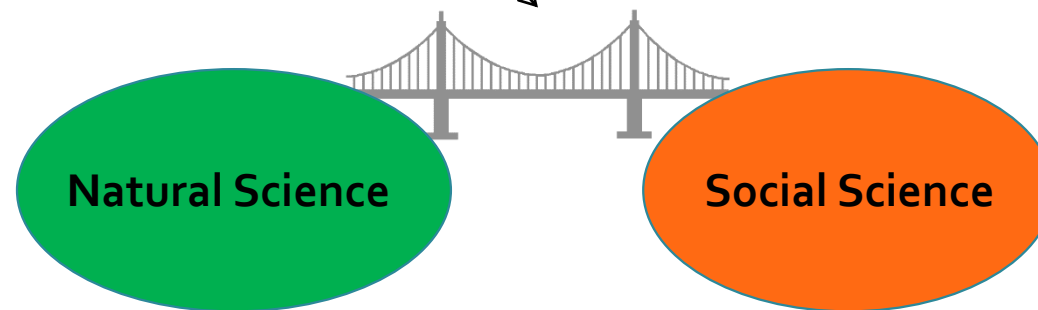


Extenics Definition & Position

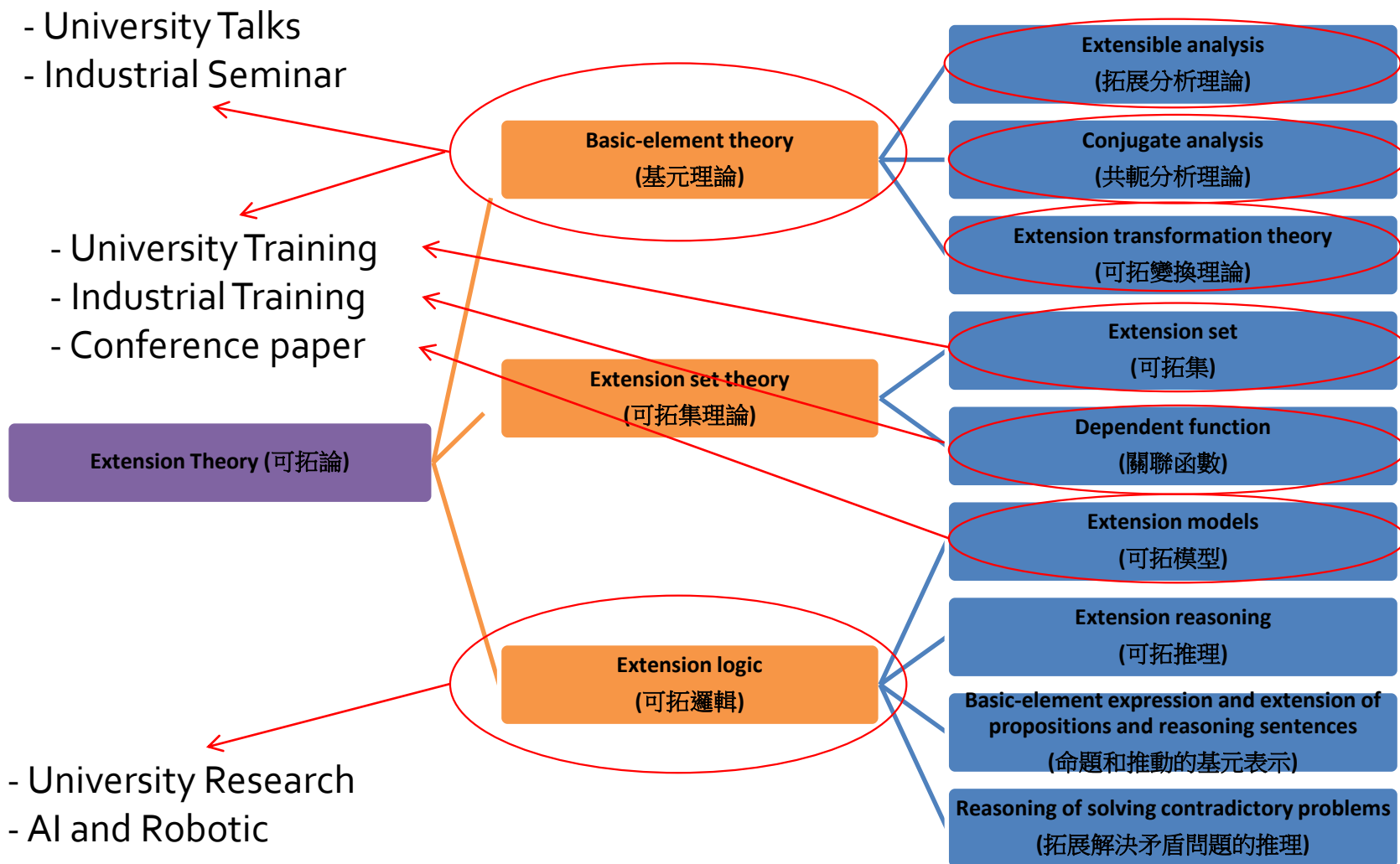
A Cross-discipline of Philosophy, Mathematics & Engineering.



The Bridge between Natural Science and Social Science.

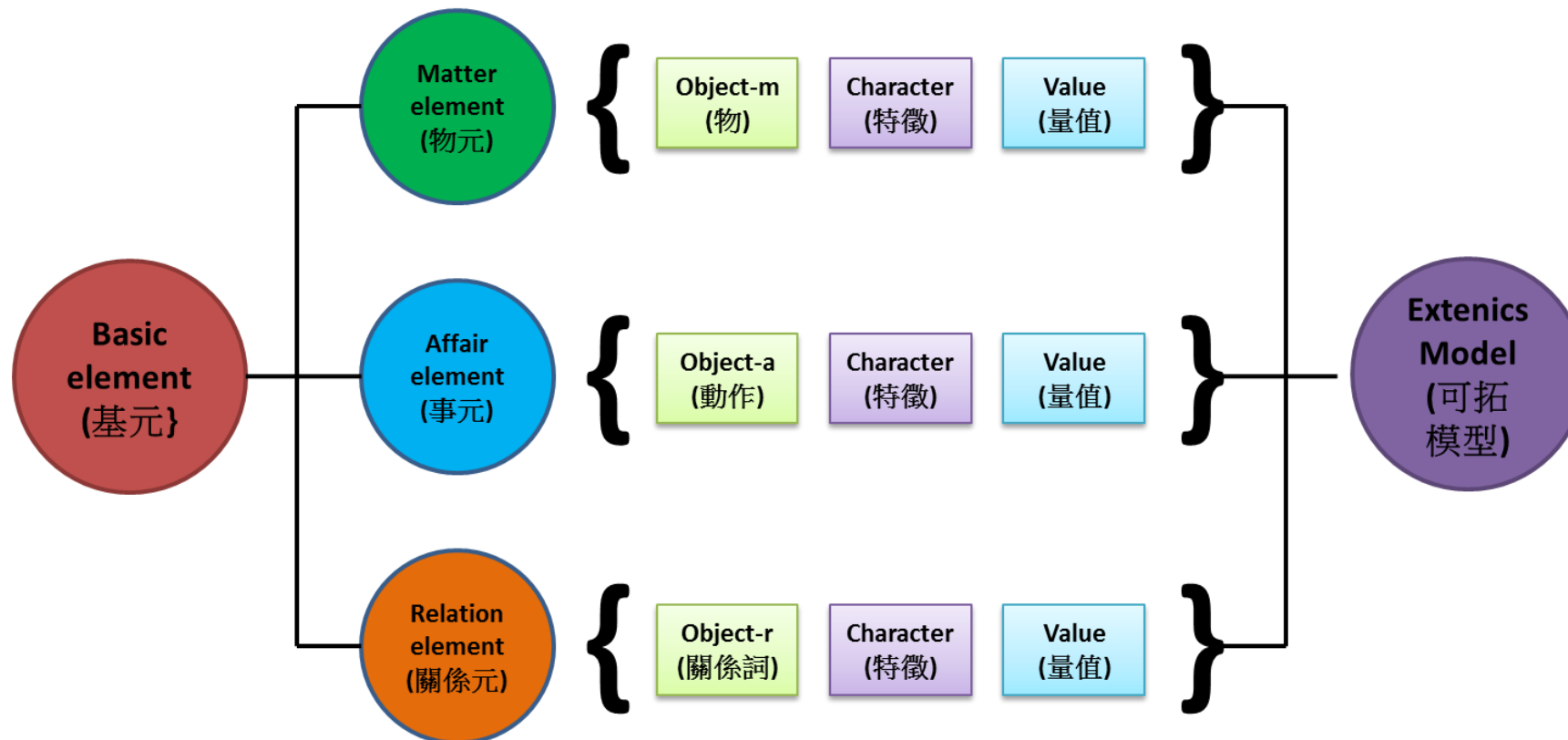


Extension Theory

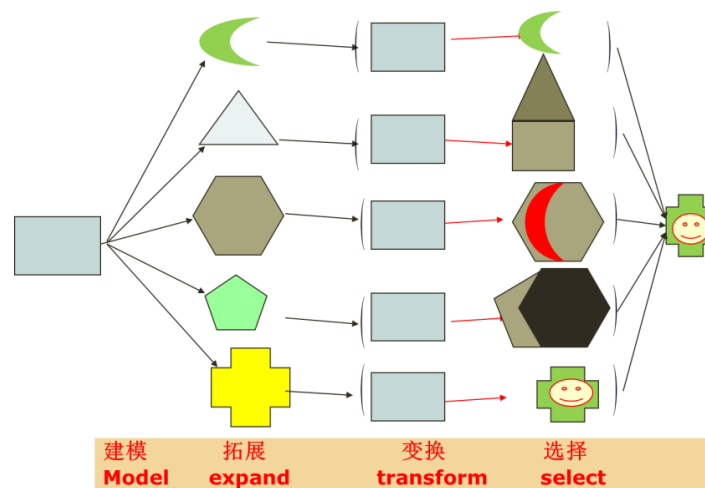
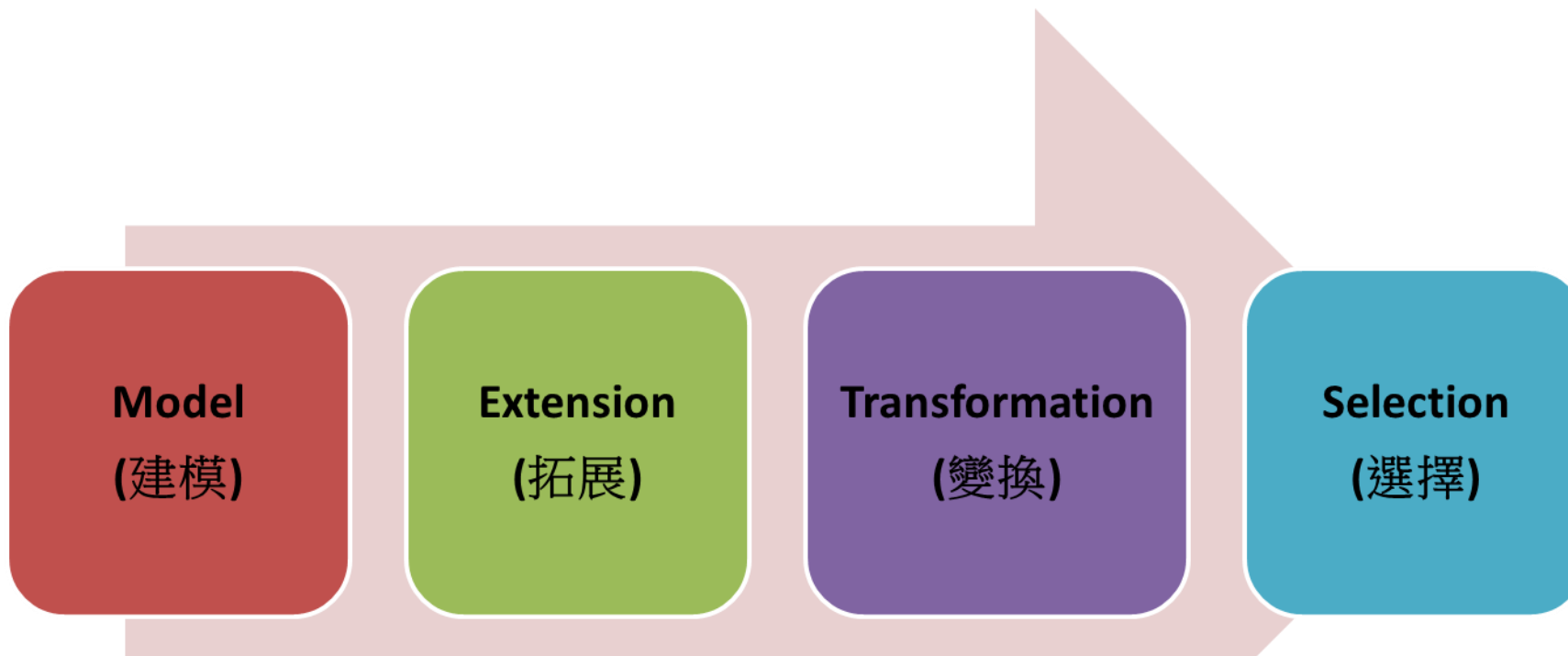


Basic-element (基元)

Basic element is logic cells of extenics used for formalized description of matter, affair and relation.



Extension Innovation - METS

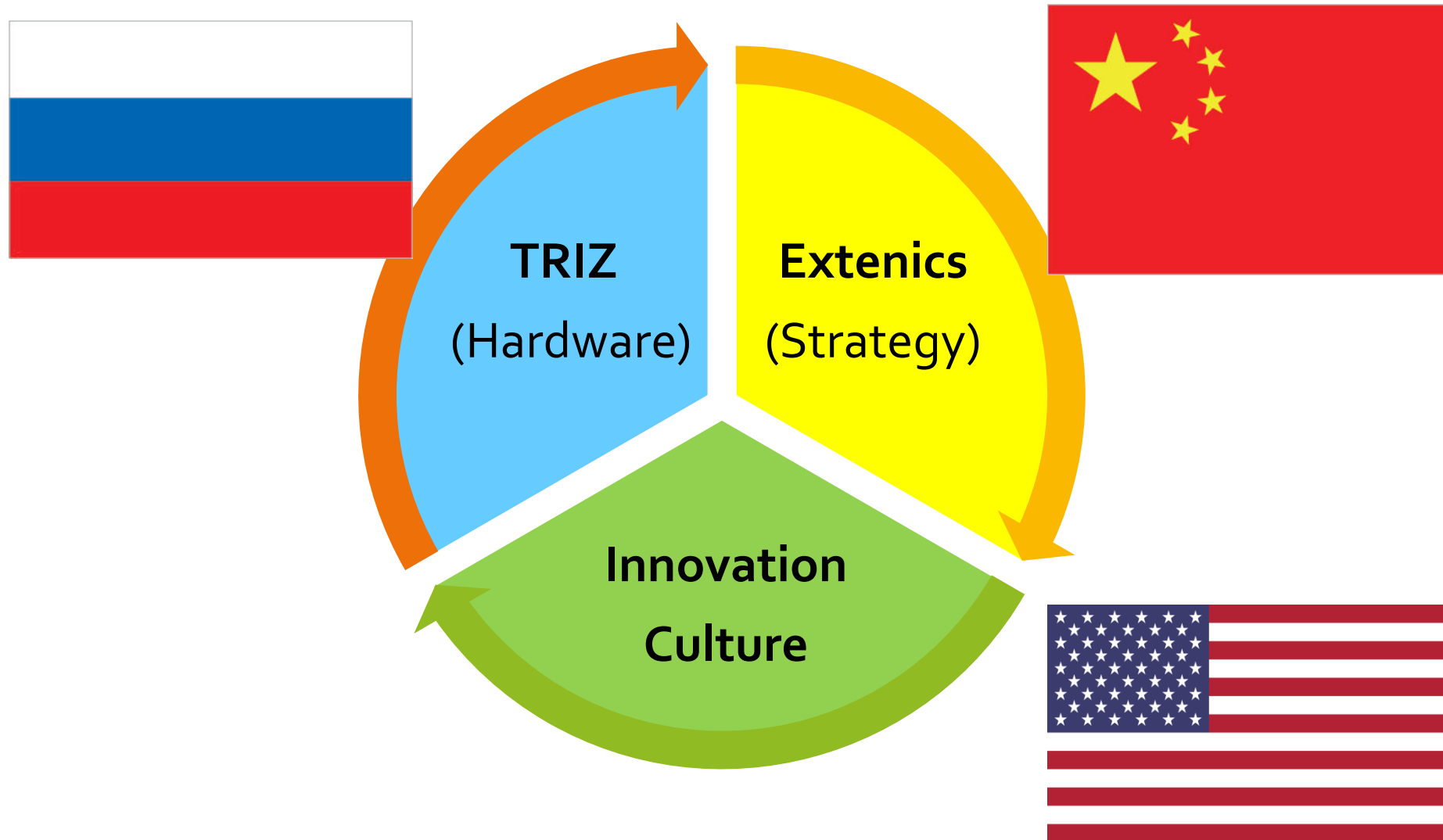


Three Creative Methods



- Developing the new product or service, Extenics described three creative methods
- **First Creative Method** (Product Innovation Starting from the Need)
 - 「 Create from nothing 」
- **Second Creative Method** (Create new products from existing products through transformations)
 - 「 Change in existing 」
- **Third Creative Method** (Create new products from a product's demerits)
 - 「 Change from demerits 」

Integrated Approach for three key innovation



Review Extenics Related Activities

Review Extenics activities in Hong Kong in 2017 (I)



The Academy of Sciences of Hong Kong (ASHK) (港科院) on **12 Jan**

The 1st Meeting of the Extenics Internationalization 2017 (第一屆可拓學國際化會議) on **4-5 Jan 2017**



HKIE Seminar on Quality Innovation – Introduction of Extenics on **20 Mar**



“Quality Innovation & Extenics” (品質創新與可拓學) to PolyU Student on **27 Feb**



CityU Guest Lecture of Quality Innovation & Extenics to TQE Students on **3 Apr**



The Preparation Meeting of the Extenics (HK) on **17 Jan**

Review Extenics activities in Hong Kong in 2018 (I)



Mr. Peter Suen (Pharmacist & Owner, ACP MMC) sponsored to CityU final year project (FYP) for Six Sigma and Extenics on 19 Apr 2018



Prof. Yang Chunyan visit HKSTP and CityU on 3rd Apr 2018



Guest Lecture of Quality Innovation & Extenics to CityU Students on 16 Apr & 22 Oct 2018



Prof. Cai Wen visit HKSTP on 11 May 2018



Visit Guangzhou Extenics Information Technology Co., Ltd (廣州可拓學信息科技有限公司) on 18 May 2018

International Promotion Activities in 2017 (I)



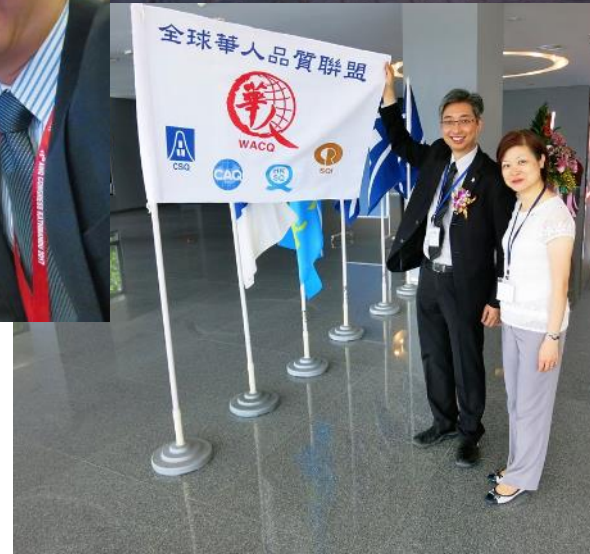
ANQ Congress 2017
Kathmandu, Nepal on
20th to 21st Sep 2017



The 2nd World Summit for Chinese Quality
第二屆全球華人品質峰會 on 16 Nov 2017



The 2nd IAQ World Quality Forum 2017
in Bled, Slovenia on 13th Oct 2017



International Promotion Activities in 2017 & 2018 (II)



The 6th National Quality Conference 2017 in Dammam, Saudi Arabia on 28th to 30th Nov 2017



The 3rd World Alliance for Chinese Quality (WACQ) Summit on 8 Nov 2018



Asian Network for Quality (ANQ) Congress 2018, Almaty, Kazakhstan from 19-20 Sep 2018.



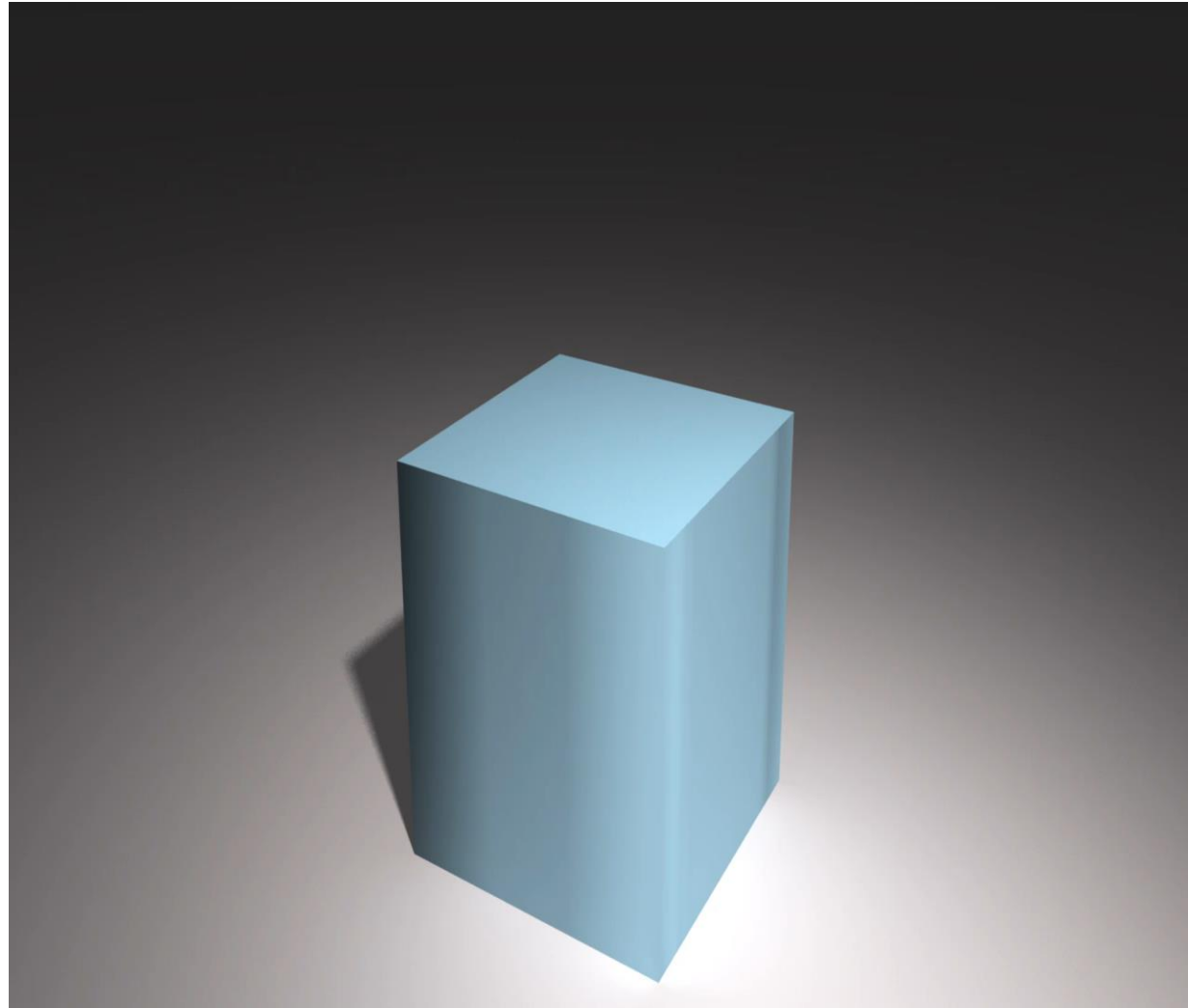
The 2023 International Conference on Artificial Intelligence Innovation and Development cum the 18th National Extenics Annual Conference and the 40th Anniversary Seminar



- The 2023 International Conference on Artificial Intelligence Innovation and Development cum the 18th National Extenics Annual Conference and the 40th Anniversary Seminar were organized by Chinese Association for Artificial Intelligence (CAAI) and Extenics Professional Committee of CAAI, as well as, Research Institute of Extenics and Innovation Methods from 18th to 20th Aug 2023.



After the Extenics workshop, they made a short video to express creativity



Quality Alchemist (品質煉金術師)

品質
煉金
術師

QASIX SIGMA
QAT QM QOC
ISO9000 QOC

<https://qualityalchemist.blogspot.com/>

My YouTube Channel



可拓頻道 (Extenics Channel)

可拓頻道 Extenics Channel
72 位訂閱者

訂閱

首頁 影片 播放清單 頻道 簡介

已建立的播放清單 排序依據

第六屆全球華人品質峰會 2021
查看完整播放清單

HKSQ Series
查看完整播放清單

Quality Academician Series (Eng)
查看完整播放清單

質量院士系列 (廣東話)
查看完整播放清單

How to write thesis (Eng)
查看完整播放清單

如何撰寫碩士/博士論文? (Thesis Writing) - 廣東話 Cantonese
查看完整播放清單

可拓學 Extenics - 普通話 Mandarin
查看完整播放清單

可拓學 Extenics - 英語 English
查看完整播放清單

可拓學 Extenics - 廣東話 Cantonese
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https://www.youtube.com/channel/UC6S_oALZVBluJ7cnbE6ub0A

