

Designing ESG KPIs: A roadmap and Learning Solution for successful KPI Design in Organizations

EAIR Forum 2024 Workshop

ID 145 - Track: Innovation in Teaching and Learning and sustainable professional practice

Dr Jean-Yves Le Corre, University of Strasbourg
Huyixiang (Shanghai) Technology Management Consulting Co., Ltd. - 沪羿祥（上海）技术管理咨询有限公司





KPI Design Workshop

Agenda

1. KPI Design: new developments in practice, challenges

2. Research Insights: Innovative Learning Solutions

3. A comprehensive roadmap for KPIs design in business organisations

4. Learning Experience – Live Demo (prototype)

'KPIs journey'

- Positions in the corporate sector before entering academia, in **controlling, auditing, and management consulting** (Lafarge SA, Areva Group, KPMG Peat Marwick...).
- **Associate Professor of Practice**, Department of Accounting of International Business School Suzhou (IBSS), XJTLU China -2014-2019. Established IBSS@Data Mining Lab in 2018
- **Trainer & Coach: KPI Design workshops** (IKA Works, CRRC...)
- **Qlik** Ambassador (2019)
- Teacher & Facilitator, **IBSS Summer School bootcamp** 'Business Strategy & Data Analytics', 2018-2019
- **Doctoral Research 'Innovative Instructional Models for Managerial Control in Virtual Learning Environments**, based on constructivist learning theory and the regulation of learner's behaviours towards socio-cognitive conflicts in the knowledge construction of performance measures.
- **Educational Developer**, Academy of Future Education, XJTLU
- **Community of Educators**: designing and implementing technology-driven learning experiences



Before we
start...

Connect to WIFI
Username: apc-aug-21
Pass: D4wwyegp

Install the Uptale App
on your mobile phone or
tablet.



Google Play

Games

Apps

Movies & TV

Books

Uptale Player

Uptale SAS

1K+

Downloads

3

PEGI 3

Install on more devices

Share

Uptale Accounts

To enter Uptale VR platform:

<https://my.uptale.io/v2/login>

User #1 : Email: dusa1@huyicomunity.com Password: dusa1

User #2 : Email: dusa2@huyicomunity.com Password: dusa2

User #3 : Email: dusa3@huyicomunity.com Password: dusa3

User #4 : Email: dusa4@huyicomunity.com Password: dusa4

User #5 : Email: dusa5@huyicomunity.com Password: dusa5

User #6 : Email: dusa6@huyicomunity.com Password: dusa6

<mailto:dusa7@huyicomunity.com>
Ctrl+Click to follow link

User #7 : Email: dusa7@huyicomunity.com Password: dusa7

Before we start...

Connect to WIFI

Username: apc-aug-21

Pass: D4wwyegp

scan the QR code and sign in using the Uptale account

Email:

jylecorre@hotmail.com

Password: RUAd88learner#



Experience language

English

Launch on this device

Launch option

Choose launch mode

On the application

On the web

Part I.

KPI Design: new
developments in
practice, challenges

```
mirror_mod = modifier_ob  
set mirror object to mirror  
mirror_mod.mirror_object  
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True  
  
selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier  
mirror_ob.select = 0  
= bpy.context.selected_ob  
data.objects[one.name].se  
  
print("please select exact  
  
--- OPERATOR CLASSES ---  
  
types.Operator):  
on X mirror to the select  
object.mirror_mirror_x"  
mirror X"  
  
context):  
context.active_object is
```

Management Accounting Education in crisis ?

- McKinsey Report (Newsletter) – April 2016
- *‘The worst-kept secret in companies has long been the fact that the yearly ritual of evaluating (and sometimes rating and ranking) the performance of employees epitomizes the absurdities of corporate life) ‘*
- *‘Most corporate performance-management systems don’t work today, because they are rooted in models for specializing and continually optimizing discrete work tasks’*

CHALLENGES

Changes in the **nature of the information** for internal and external reporting: **external and future orientations of performance measures, ESG performance**

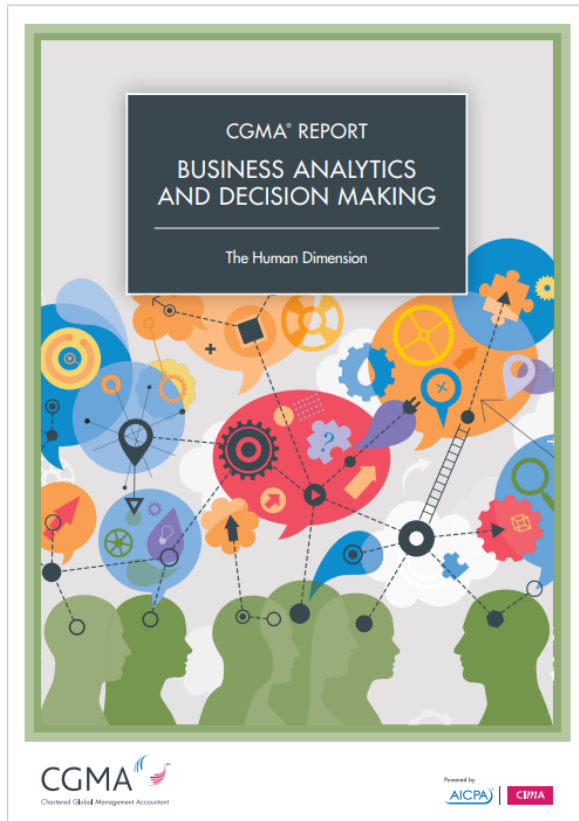
Data analytics technologies are making production of 'standard' reports easily automated

New tools & frameworks have emerged to guide the reporting of internal and external information: **'Integrated Reporting (Thinking)', Strategic Management Accounting.**

New skills required to successfully design and implement managerial control systems : **cognitive and social process vs. knowledge skills**



The 'Human Dimension' of Managerial Control Systems



- **Skills** — how people process information, learn, create knowledge, and make decisions – **acknowledging that creating sense and understanding takes place in the human mind.**
- **Role** - Management accountants ideally positioned to help a company focus on gaining insights from data.
- **Tools** - Analytics exploring data to generate new knowledge and insights

Part II.

Research Insights: Innovative Learning Solutions

```
mirror_mod = modifier_ob  
set mirror object to mirror  
mirror_mod.mirror_object  
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True  
  
selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier  
mirror_ob.select = 0  
= bpy.context.selected_ob  
data.objects[one.name].se  
  
print("please select exact  
  
--- OPERATOR CLASSES ---  
  
types.Operator):  
on X mirror to the select  
object.mirror_mirror_x"  
mirror X"  
  
context):  
context.active_object is
```

RESEARCH INSIGHTS: innovative learning solutions for management accounting education in the contemporary context

EDUCATORS SHOULD FOCUS ON THE THREE MAIN DIMENSIONS INCLUDING **VIRTUAL CONSTRUCTIVIST LEARNING ENVIRONMENTS, COGNITIVE LEARNING, AND IMMERSIVE LEARNING (STORYTELLING)** SUPPORTED BY DIGITAL TECHNOLOGY

SOCIO-COGNITIVE MODELS CAN HELP EDUCATORS CREATE SCENARIOS (SITUATION-BASED) AND TOOLS TO HELP LEARNERS ADAPT THEIR **BEHAVIORAL INTENTIONS** WHEN COLLABORATING WITH OTHERS IN THE PROCESS OF **CONSTRUCTION** OF PERFORMANCE INDICATORS.

INNOVATIVE LEARNING SOLUTIONS FOR MANAGEMENT ACCOUNTING EDUCATION SHOULD BE SUPPORTED BY DIGITAL LEARNING TOOLS: INCORPORATING DIGITAL LEARNING TOOLS FROM **LEARNING MANAGEMENT SYSTEM, VR IMMERSIVE PLATFORM AND AI-DRIVEN TOOLS.**



INNOVATIVE LEARNING SOLUTIONS FOR KPI DESIGN

Constructivist
'Paradigm' in
Managerial
Control Theory

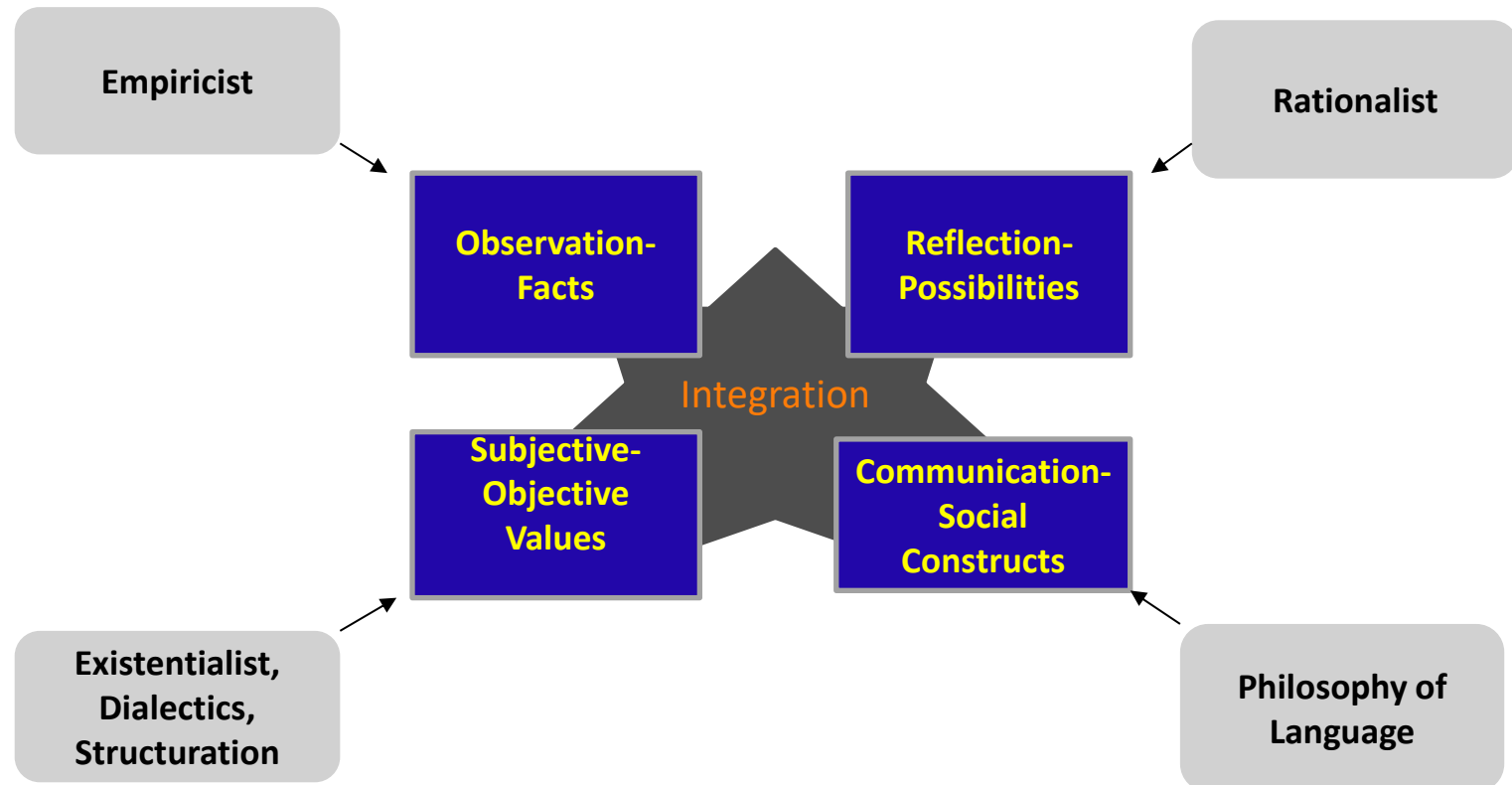
Behavioral
Accounting/
Psychology: socio-
cognitive conflicts

Instructional
Design Technology
–Enablement

<p>xiang Plastics Proc Business Case Simulat Course General</p>	<p>Qlik Data Analytics</p>	<p>Main Section: MPP</p>	<p>MPP Seminars</p>	<p>Motivation Training Advice Success COACHING & MENTORING Directio Gear Feedback Discussions</p>
<p>Lectures (pre-recorded)</p>	<p>MPP Knowledge Resources Platf</p>	<p>Average resolution cost per complaint ** MPP Data Exchange</p>	<p>MPP Project Teams</p>	<p>MPP Departments</p>
<p>MPP Intergroups</p>	<p>CHINA CEO MPP Forum Discussions</p>	<p>Group Submissions</p>	<p>Educational Research</p>	<p>Optional Readings</p>

'ACTOR-REALITY' CONSTRUCTION THEORY

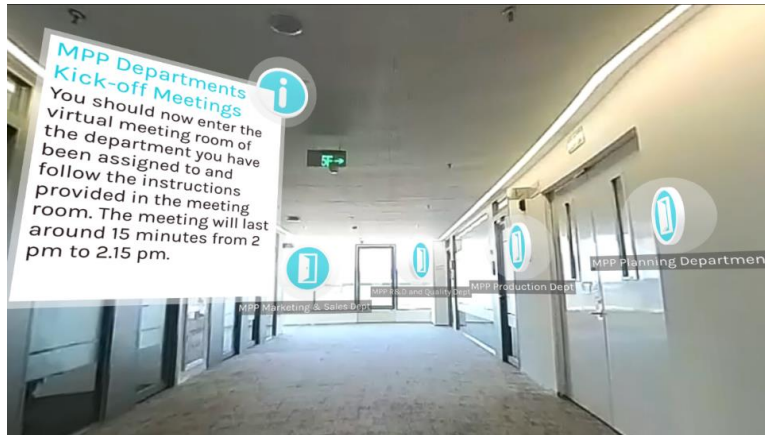
Four dimensions of reality – facts, possibilities, values and communication – must be integrated in the actor-world-relation if the construct is to form a successful basis for effective, functioning actions (Norreklit, 2017)



Norreklit, L., (2017), 'Actor-Reality Construction' in Norreklit, L (Editor) 'A Philosophy of Management Accounting: a Pragmatic Constructivist Approach. Routledge, 23-71

PSYCHOLOGICAL STUDIES

Psychology in Managerial Control Theory and Educational Psychology



- Otley et al. (1999) continuum of **instrumental and communicative types of rationality** of managerial control systems
- Townley et al. (2003) **interplay** between two types of rationality in the construction of Managerial Control Systems.
- Managerial Accounting (contingent) theory: Hall (2015) call for field studies of the psychological processes to **observe and analyze the sequence of mental processes in the construction of MCSs**

- Knowing is inseparable from doing : all knowledge is **situated in activity** bound to social, cultural and physical contexts
- **Socio-cognitive conflicts** (discrepancies of knowledge) to support cognitive development.
- Individuals reorganize and restructure from their interactions with others and rebuild their respective points of view to advance in their cognitive development
- **Self-regulation** of learning by understanding the antecedents that influence cognitive styles and directing learning behaviors



**Doctoral
research**



**Instructional De
sign
Frameworks**



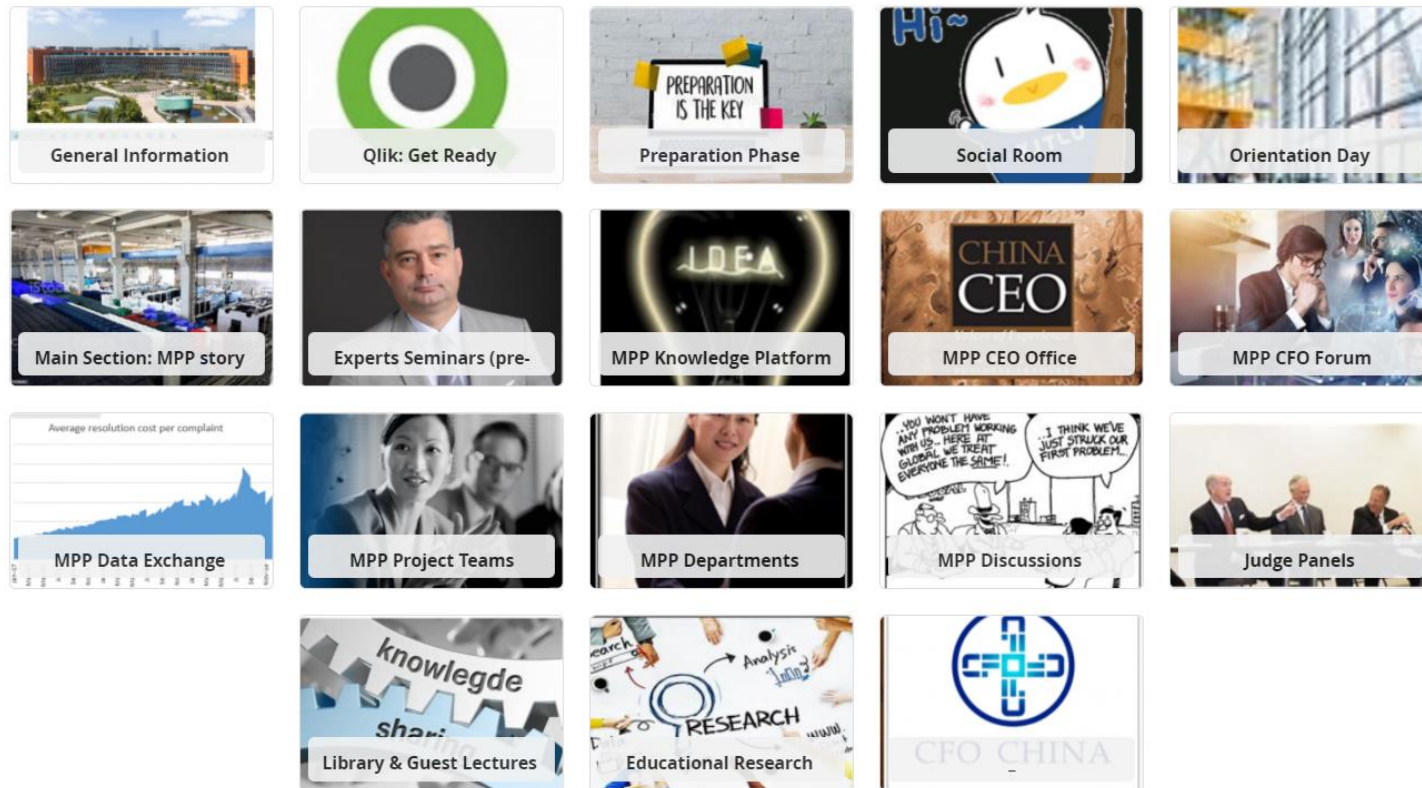
**Virtual
Learning
Environments**



**Principles &
Application**

	Objective	Research Methods
Chapter III	To formulate instructional goals for the design and implementation of virtual constructivist learning environments (VLCES) for managerial accounting education	Mixed methods action research Multi-case studies
Chapter IV	To investigate an integrated socio-cognitive model to assist educators in self-regulation of socio-cognitive conflicts : enhance cognition and guide learning behaviours in the process of knowledge construction	Mixed-methods sequential explanatory design Scenario-based Experiments
Chapter V	To propose guidelines for design and implementation of learning experiences supported by digital learning tools (including virtual reality and Artificial Intelligence)	Prototyping Practice-based Research (inductive)

‘Creating authentic environments that mimic real-life situations of KPI Design projects’



Le Corre J-Y, Burger-Helmchen T. Managerial Control in an Online Constructivist Learning Environment: A Teacher’s Perspective. Knowledge. 2022; 2(4):572-586.
<https://doi.org/10.3390/knowledge2040034>



COGNITIVE SKILLS

- The learning process and VR scenarios generates socio-cognitive conflicts resulting from multi-groups **interactions** in which learners reorganize and restructure their respective points of view to advance in their cognitive development: social interactions between learners in the same group ('Project Teams') and interactions between different groups from the Project Teams
- The learning process supports effective resolution of those as for example through systemic **exploration-integration of primary data or information** generated by the learning platform , **and/or secondary data**



Part III.

A comprehensive roadmap
for KPIs design in business
organisations



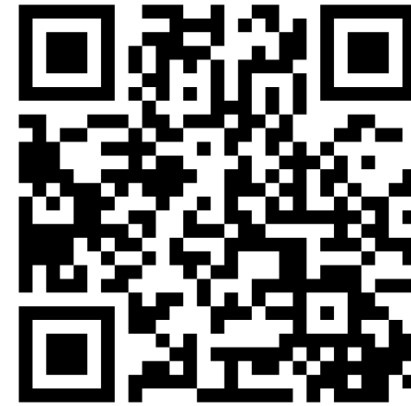
You are giving a pitch to a group of business executives



Suggest **THREE** reasons why any business organization should define its performance measures

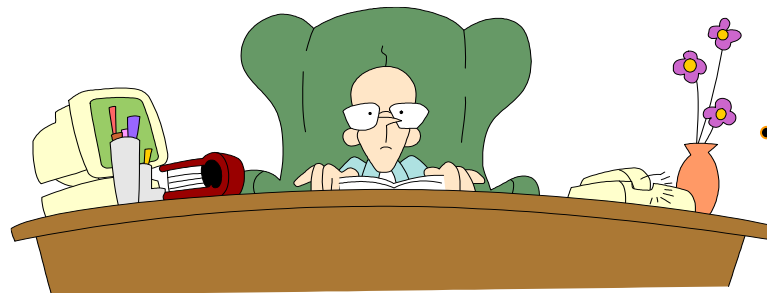


Submit your answers via the QR code



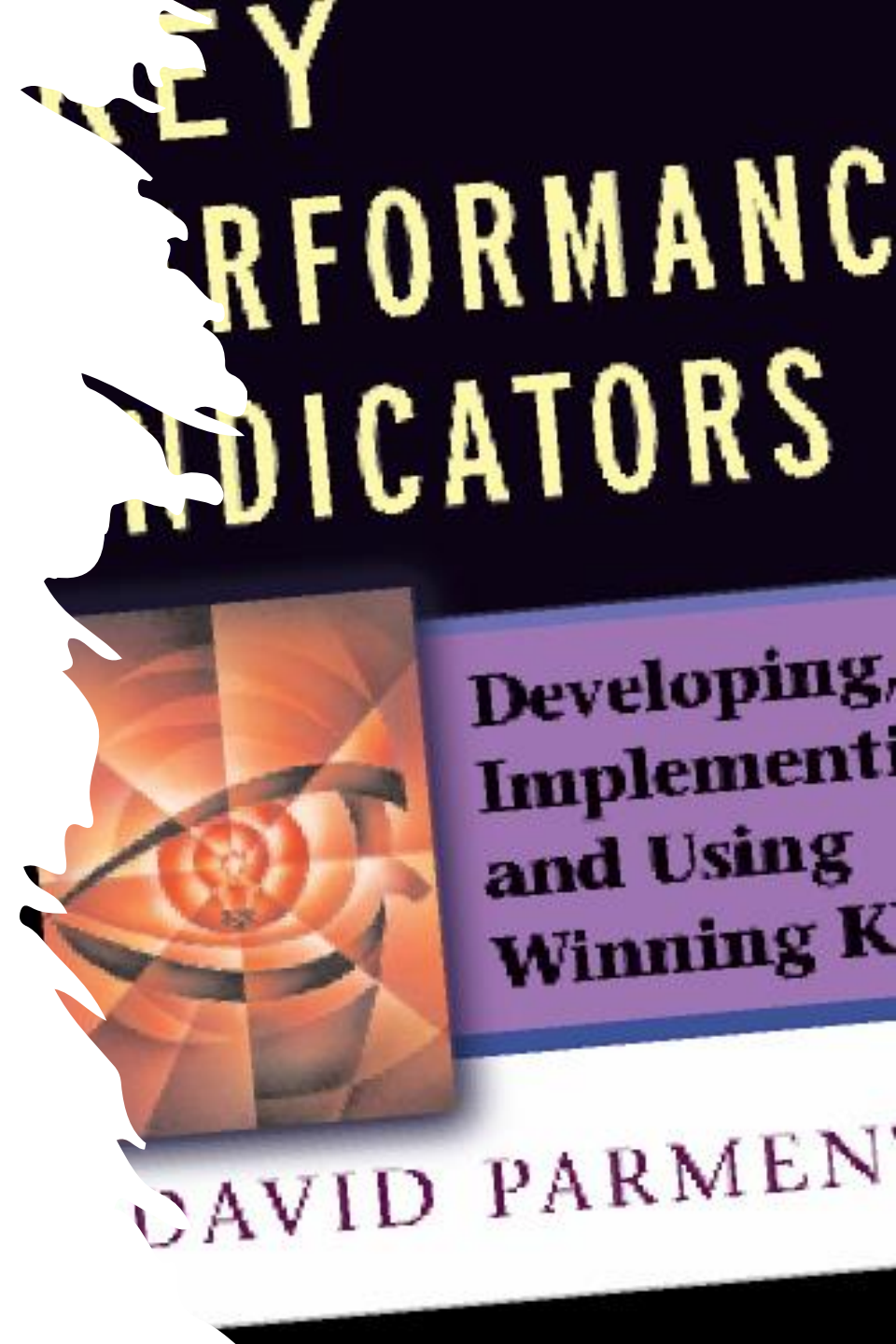
Do we really
need
Performance
Measures?

What are the
benefits ?



Why do we need measures ?

- All organisations use performance measurement. It is the basis for:
 - most key decisions
 - the planning, control and reporting cycle
 - performance-related pay
- Inside organisations they are needed for action on questions such as
 - How are we doing against plans?
 - How do different parts of the organisation compare with each other?
 - How does the organisation as a whole compare with others?
 - What is my future as an employee/how safe is my job?
 - and in helping with various kinds of decisions.



Issues with Traditional Budgeting

Purposes of performance management	Traditional budgeting processes	Beyond Budgeting Processes
Goals	Short term focus	Longer-term focus
Rewards	Individual incentives	Recognition of team-based success
Plans	Planning based on premise of predict and control (deterministic)	Plans continuously adapted (continuous improvement)
Resources	Centralised process allocation of resources	Resources allocated on demand/ affected to strategic objectives
Co-ordination	Linking functional budgets	Meet customer needs
Controls	Financial Indicators	Multi facet/level information



What is the problem with non-financial measures ?

- too many measures
- maybe we can not measure (accuracy/integrity)
- the link with financial performance cannot always be demonstrated
- Non-financial measures are not always “visible” to the management
- Where to set the target? How to relate to pay and incentives?
- Financial measures may be difficult to find because:
 - specific to the organisation
 - wide choice of measures
 - too much ad hoc and undirected
 - can change over time

Characteristics of good performance measures

- Link to strategy and goals of the organisation
- Be simple and “meaningful”
- Recognise “controllability”
- Emphasize the positive
- Be timely
- Include benchmarking
- Embrace participation and empowerment
- Include only a few performance measures
- Link to rewards

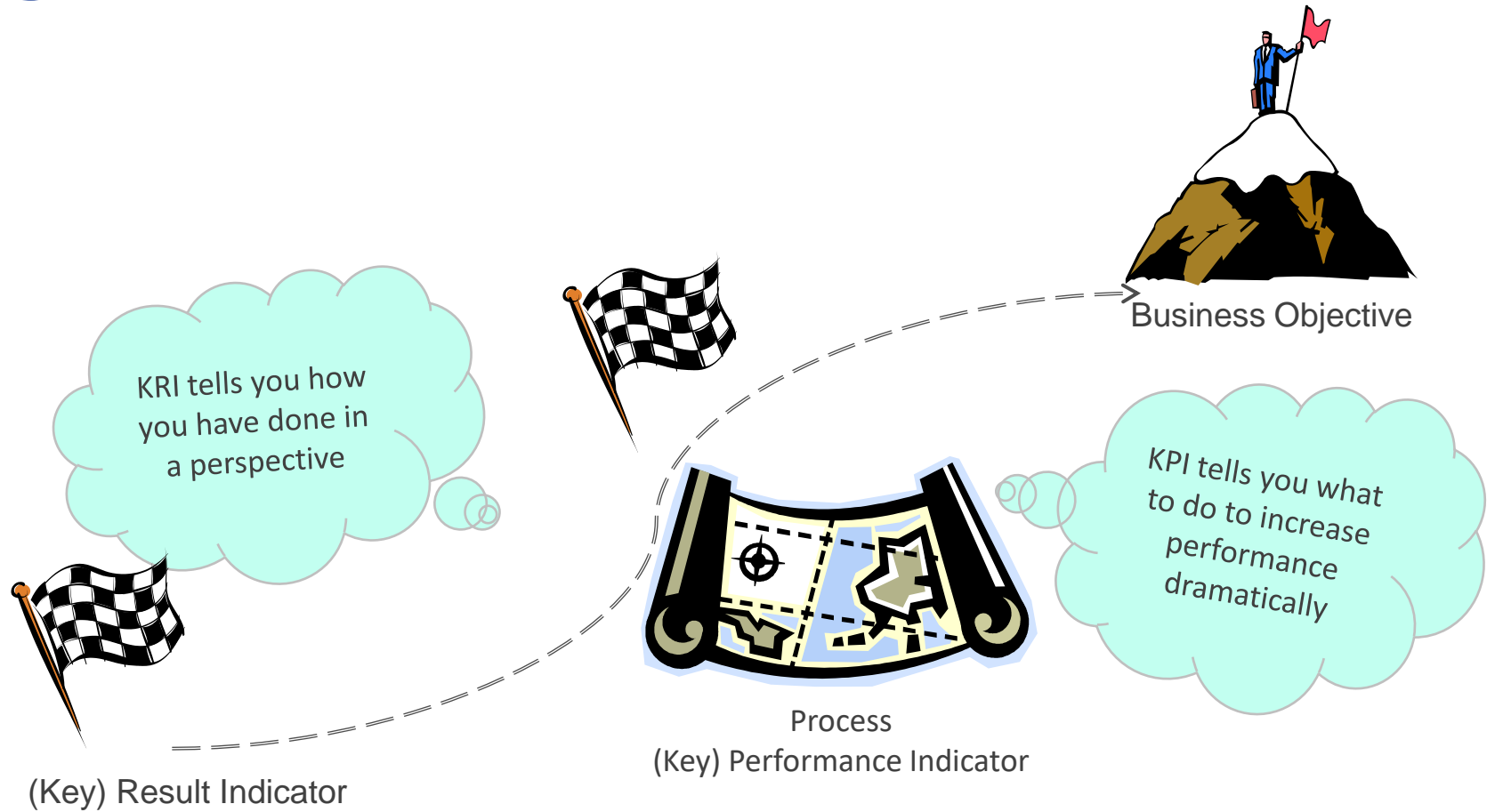


What is a good KPI ?

- A CEO of a distribution company realized that a critical success factor for their business was trucks leaving as close to capacity as possible. A large train truck capable of carrying more than 40 tons was being sent out with small loads as dispatch managers were focusing on “delivering in full on time” to customers.
 - Each day by 9 a.m., the CEO received a report of those trailers that had been sent out underweight. The CEO called the dispatch manager and asked whether any action had taken place to see if the customer could have accepted the delivery on a different date that would enable better utilization of the trucks. In most cases the customer could have received it earlier or later, fitting in with a past or future truck going in that direction. The impact on profitability was significant.
 - Just with the airline example, staff did their utmost to avoid a career-limiting phone call with their CEO!



Lag/Lead Indicators



KRI vs. KPI



KRI

Financial or nonfinancial

Measured on monthly or yearly basis

Reported to Board of Directors

Helpless for staff, because it doesn't tell them what to do

Only MDs are responsible for it



KPI

Non-financial

Measured frequently (daily/weekly)

Acted on by MDs and department heads

Understanding of the measure and the corrective action required by all staff

Ties responsibility to the individual or team



Some Warning signs ...

No one notices when performance reports are not supplied !

Significant time is spent in debating the meanings of the measures

Measures have not changed for time. ..

Performance is acceptable but not on profit

Customers do not buy even if prices are competitive



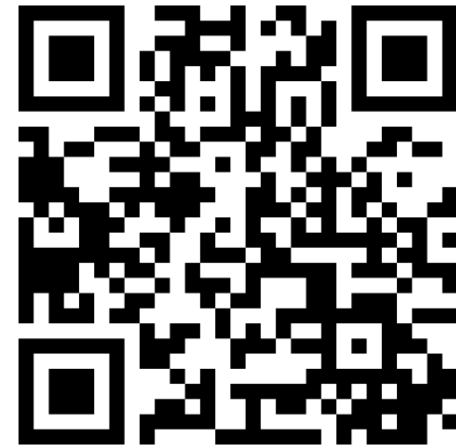
You are assigned as a KPI design 'Advisor'



Suggest THREE piece of advice on how the company should embark on KPI design

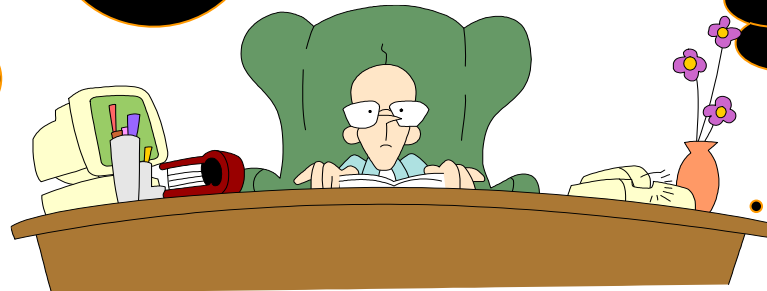


Submit your answers via the QR code

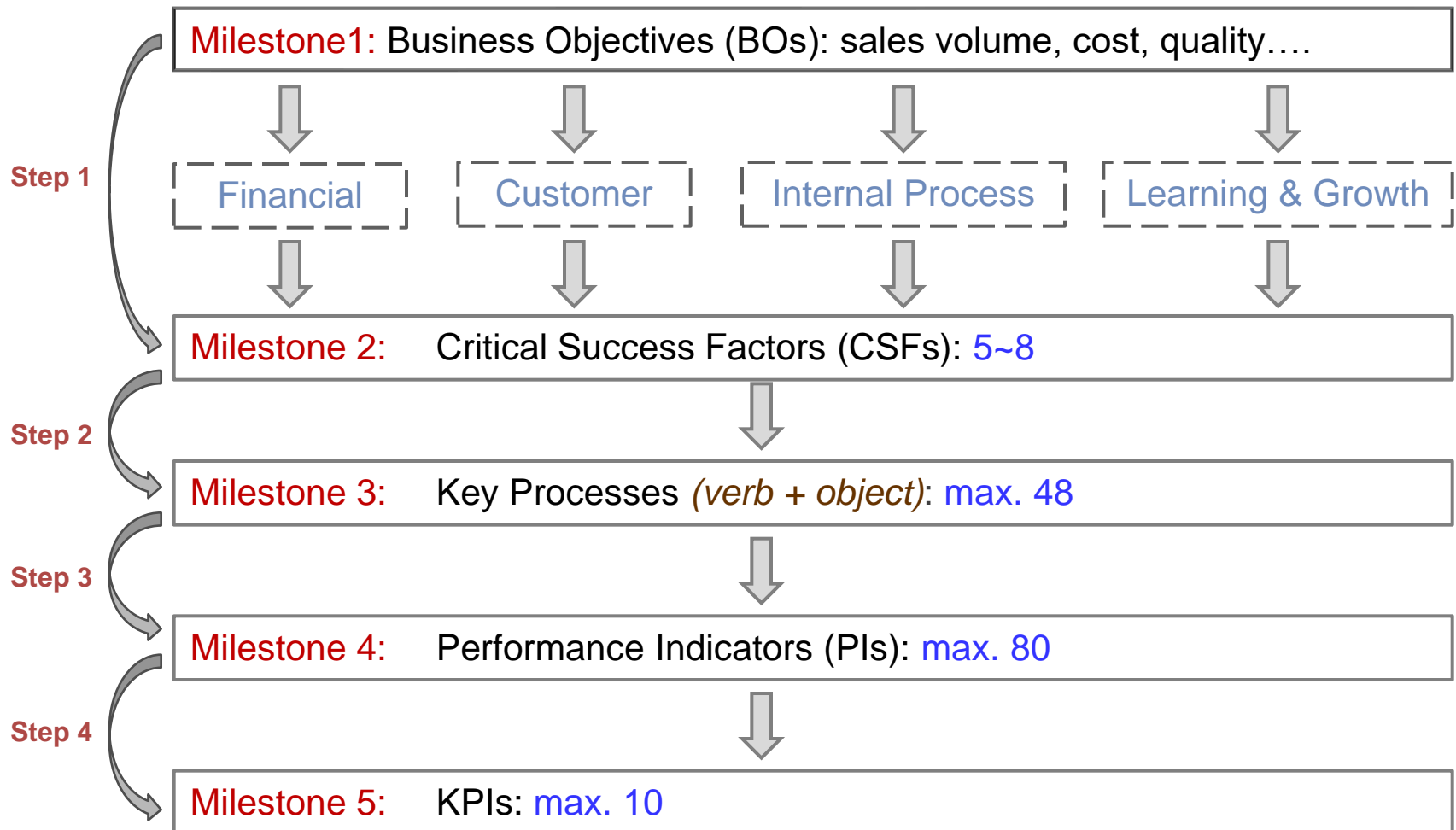


How can we be successful in designing the rights performance measures ?

What should we do?



KPI Project Design: A roadmap



Balanced Scorecard (平衡计分卡)

How do we look to shareholders?

Financial Perspective	
Goals	Measures

How do customers see us?

Customer Perspective	
Goals	Measures

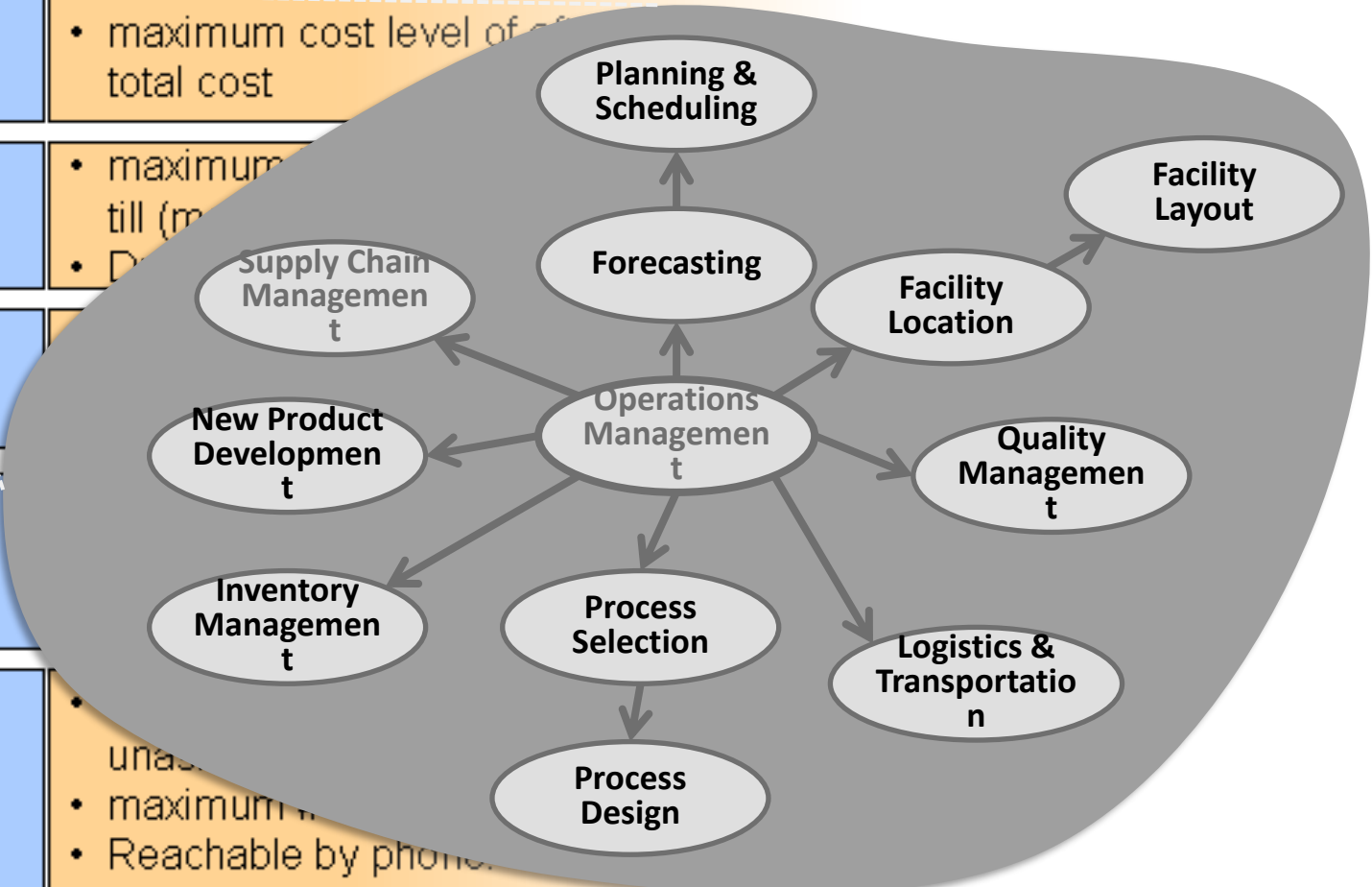
Internal Business Process Perspective	
Goals	Measures

- Financial: improve returns to shareholders
- Customer: increase customer satisfaction
- Internal Business Process: improve the quality of products. Create new, innovative products. Improve production process
- Learning & Growth: improve employee satisfaction. Develop employee's technical skills

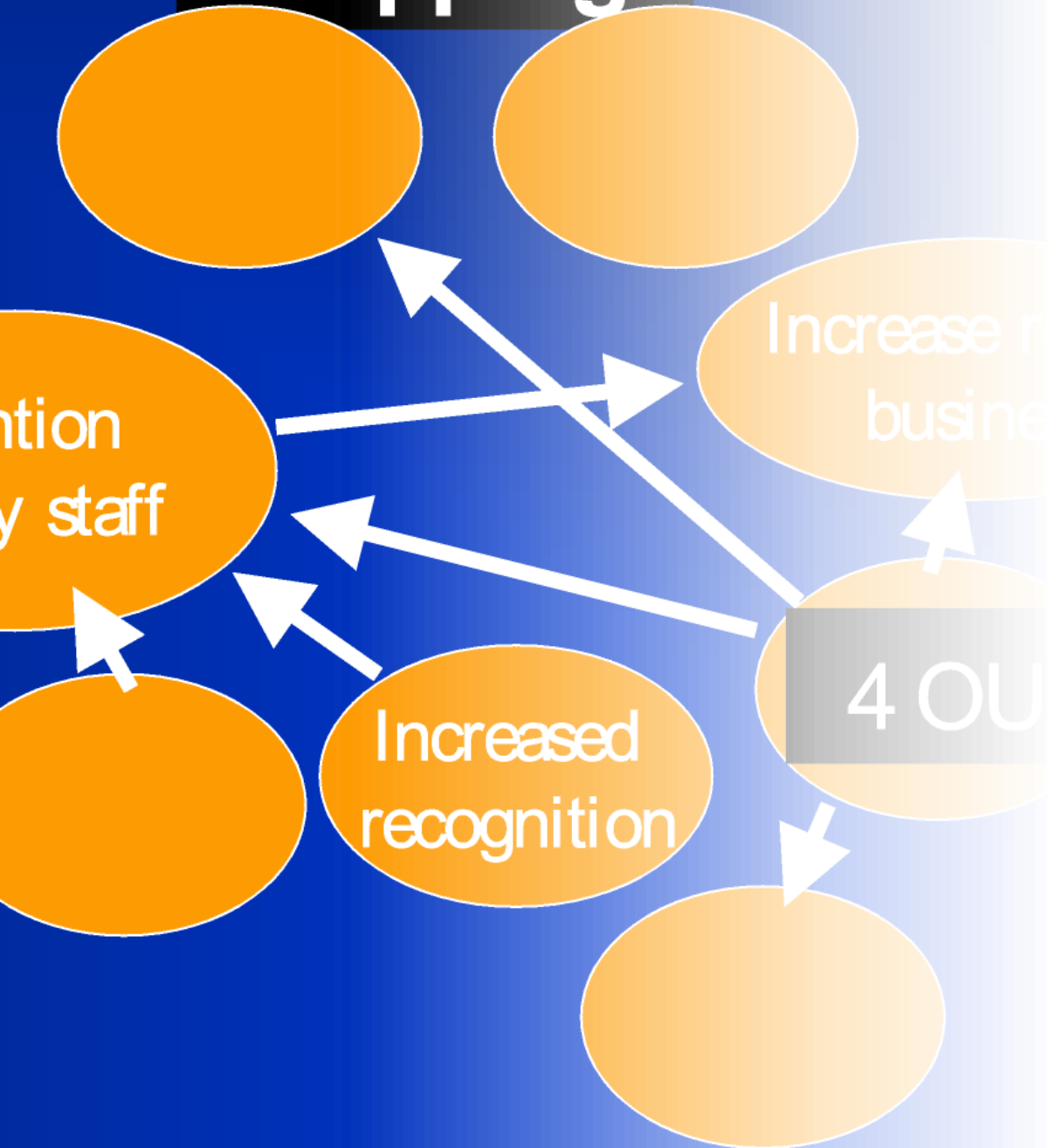
Innovation and Learning Perspective	
Goals	Measures

Can we continue to improve and create value?

CSF	Performance indicators
<p>Reliability</p>	<ul style="list-style-type: none"> • maximum # return send goods in % of total • maximum # errors in requests, continuation in % of total • minimum % total acceptance • minimum % van proper processing premises
<p>Efficiency</p>	<ul style="list-style-type: none"> • maximum cost level of a product in % of total cost
<p>Timely</p>	<ul style="list-style-type: none"> • maximum delivery time • Delivery time till (m) • Delivery time
<p>Innovative capacity</p>	
<p>Flexibility</p>	
<p>Client focus</p>	<ul style="list-style-type: none"> • unavailability • maximum number of clients • Reachable by phone



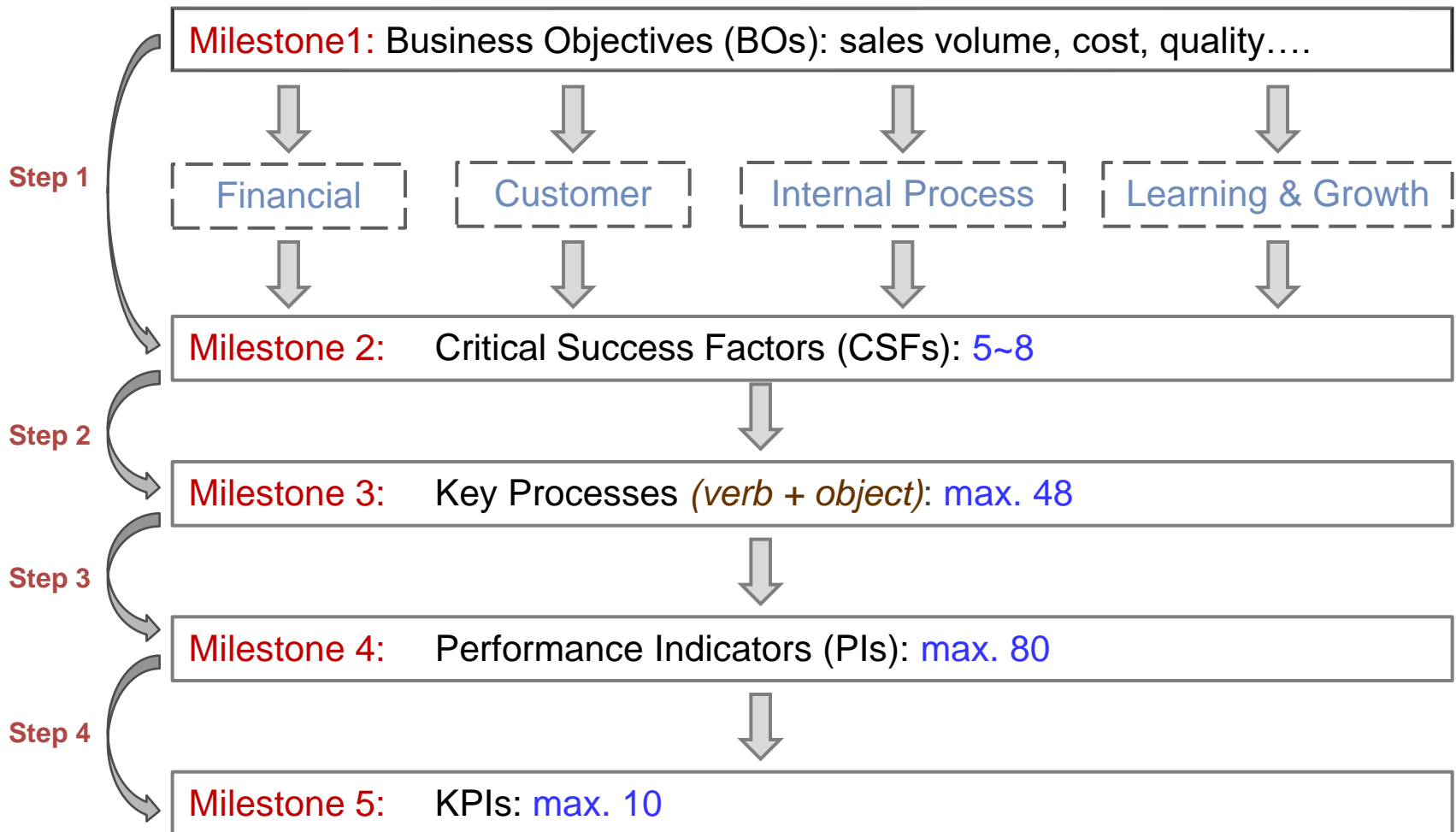
mapping



Critical Success Factors

- The CSFs are 'the list of issues or aspects or organizational performance that determine ongoing health, vitality and well-being' (source: AusIndustry)

KPI Setting: A roadmap



IMMERSIVE LEARNING

Immersive learning is 'Learning based on practice, in which the environment is improvised for the student through real-life scenarios, where he receives, and processes information based on individual characteristics'



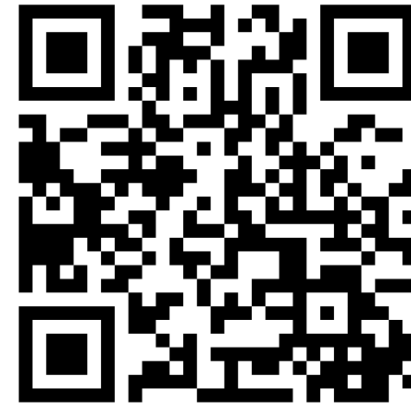
You are assigned as a KPI trainer to give a 2 day workshop on KPI design



How would an immersive learning experience to train executives on KPI design look like ?

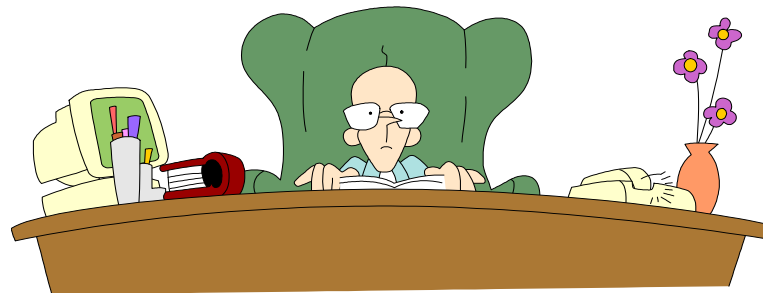


Submit your answers via the QR code



Let's try to imagine things differently... What would be a breakthrough approach to train executives on KPI design ?

How would the experience look like



Part IV.

KPI Design Learning Experience

```
mirror_mod = modifier_ob  
set mirror object to mirror  
mirror_mod.mirror_object  
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True  
  
selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier  
mirror_ob.select = 0  
= bpy.context.selected_ob  
data.objects[one.name].se  
  
print("please select exact  
  
--- OPERATOR CLASSES ---  
  
types.Operator):  
on X mirror to the select  
object.mirror_mirror_x"  
mirror X"  
  
context):  
context.active_object is
```






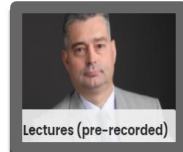








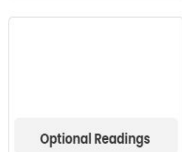


INNOVATIVE LEARNING SOLUTIONS FOR KPI DESIGN

Constructivist
'Paradigm' in
Managerial
Control Theory

Behavioral
Accounting/
Psychology: socio-
cognitive conflicts

Instructional
Design Technology
–Enablement

 <p>xiang Plastics Pro Business Case Simulat Course General</p>	 <p>Qlik Data Analytics</p>	 <p>Main Section: MPP</p>	 <p>MPP Seminars</p>	 <p>COACHING & MENTORING Feedback Discussions</p>
 <p>Lectures (pre-recorded)</p>	 <p>MPP Knowledge Resources Platf MPP Intranet Platform</p>	 <p>Average resolution cost per complaint ** MPP Data Exchange</p>	 <p>MPP Project Teams</p>	 <p>MPP Departments</p>
 <p>MPP Intergroups</p>	 <p>CHINA CEO MPP Forum Discussions</p>	 <p>Group Submissions</p>	 <p>Educational Research</p>	 <p>Optional Readings</p>

KPI design simulation tool

The KPI Design Executive Workshop blended experience aims to provide a technology-enhanced learning environment based on those principles and help you develop skills you may apply at the workplace.

'KPI Design Project simulation tool' will guide you through the challenging journey of creating a KPI dashboard for a fictitious business organisation through an immersive learning experience which follows three main principles:

Exploratory Approach

Creating a KPI dashboard is a creative exercise that challenges and tests assumptions about your organisation's strategic objectives, processes, and business model. The learning experience will help you develop and share a vision of your organisation's success path. While rethinking your organisation, your role in shaping its future is significant and empowering.

Collaborative Learning

Creating a KPI dashboard is a team-based exercise where sharing information and data and communication within and between the KPI design project teams are critical to success.

Knowledge Sharing

Creating a KPI dashboard is developing new knowledge for your organisation, which requires digital tools for knowledge representation.

The KPI Design Executive Workshop blended experience aims to provide a technology-enhanced learning environment based on those principles and help you develop skills you may apply at the workplace.

KPI design simulation tool **DIGITAL LEARNING TOOLS**

Activities	Digital Tools
Activities to support problem-solving	*Knowledge Representation Tools/Mindtools *Collaboration and Communication Tools (to restate and communicate problems)
Activities to support hypothesis testing	* Immersive Environments (e.g., simulations & games) *Knowledge Representation Tools/Mindtools *Collaboration Tools
Activities to support exploration & creation	* Immersive Environment that allow for exploration and/or creation *Information Search and Resource Management Tools
Activities to support for role-playing	* Immersive Environments (multi and single user, using avatars, games)



LMS



VR



VT

- **Source:** Dabbagh, N., Marra, R.M., & Howland, J.L. (2018). Meaningful Online Learning: Integrating Strategies, Activities, and Learning Technologies for Effective Designs (1st ed.). Routledge

Quizzing



Quiz Test 1

How many product lines does the company MPP have ?

only 2 product lines

3 product lines

5 product lines

Which pedagogies, digital tools, and instructional strategies for a KPI Design Learning experience ?

Moodle Integration

Video simulation

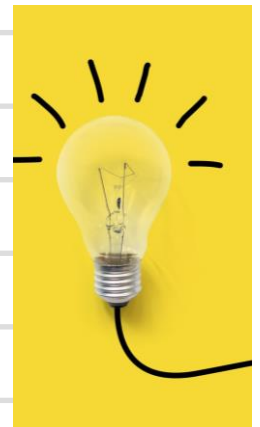
Quizzing

Intearctive Videos

Simulated Lecture Experience

Virtual Tours

Asynchronous Communication



Demo –
Scene #1
MPP
Factory
Visit



How to open your KPI Simulation Tool workspace?

<https://elearning.chinait.com/eyfs/login/index.php>

Username : huyixiang_guest

Password guest002

Demo –
Scene #2
KPI Design
Project -
Phase 2 -
Part 1

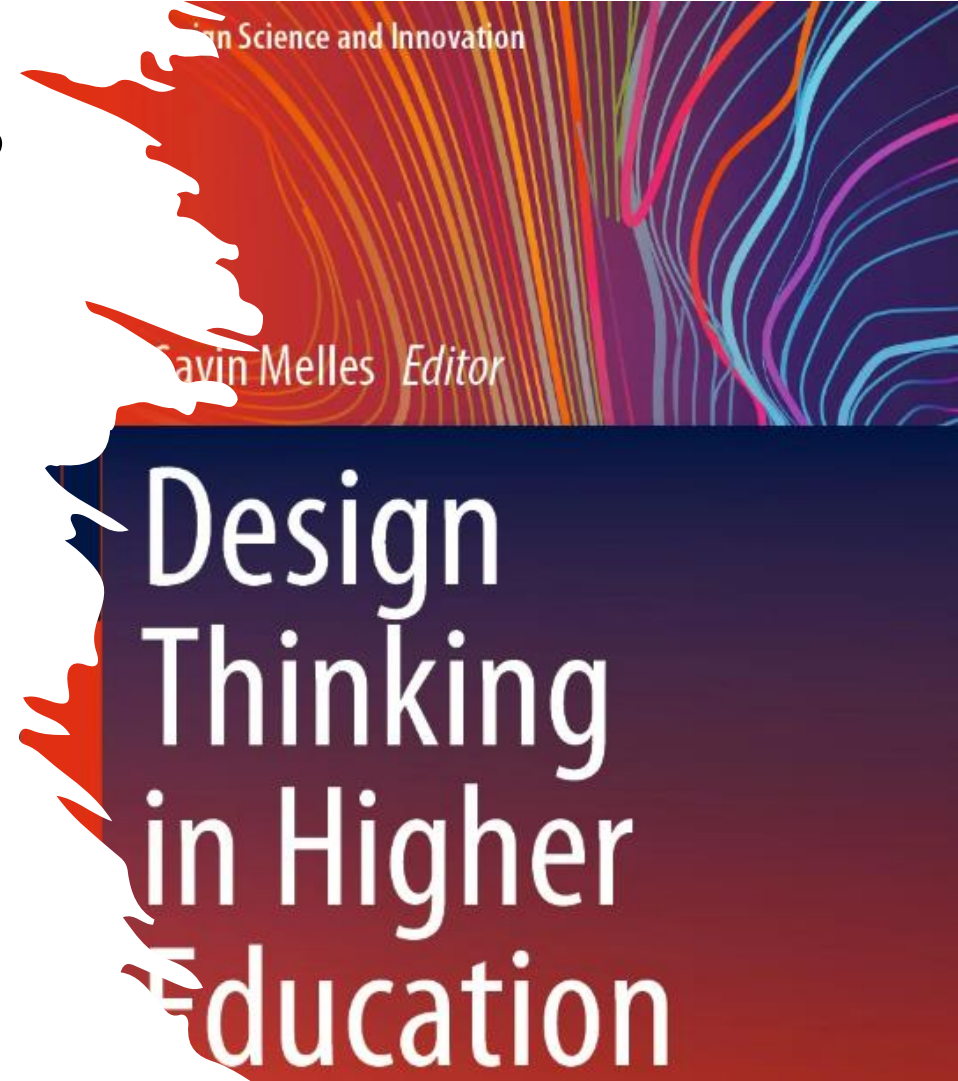


Demo –
Scene #3
KPI Design
Project -
Phase 4 -
Part 2



Prototyping Learning Solutions

*'Central to **prototype design and development** is the view that it is an educational imperative to move from a general consumptive-intense educational orientation with the primary educator role focused on the transfer of knowledge to an **educational culture of collaborative creativity** across diverse discipline contexts where **educator roles encompass that of designer, facilitator, collaborator and mentor**'*



KPI Design Workshop

Conclusion



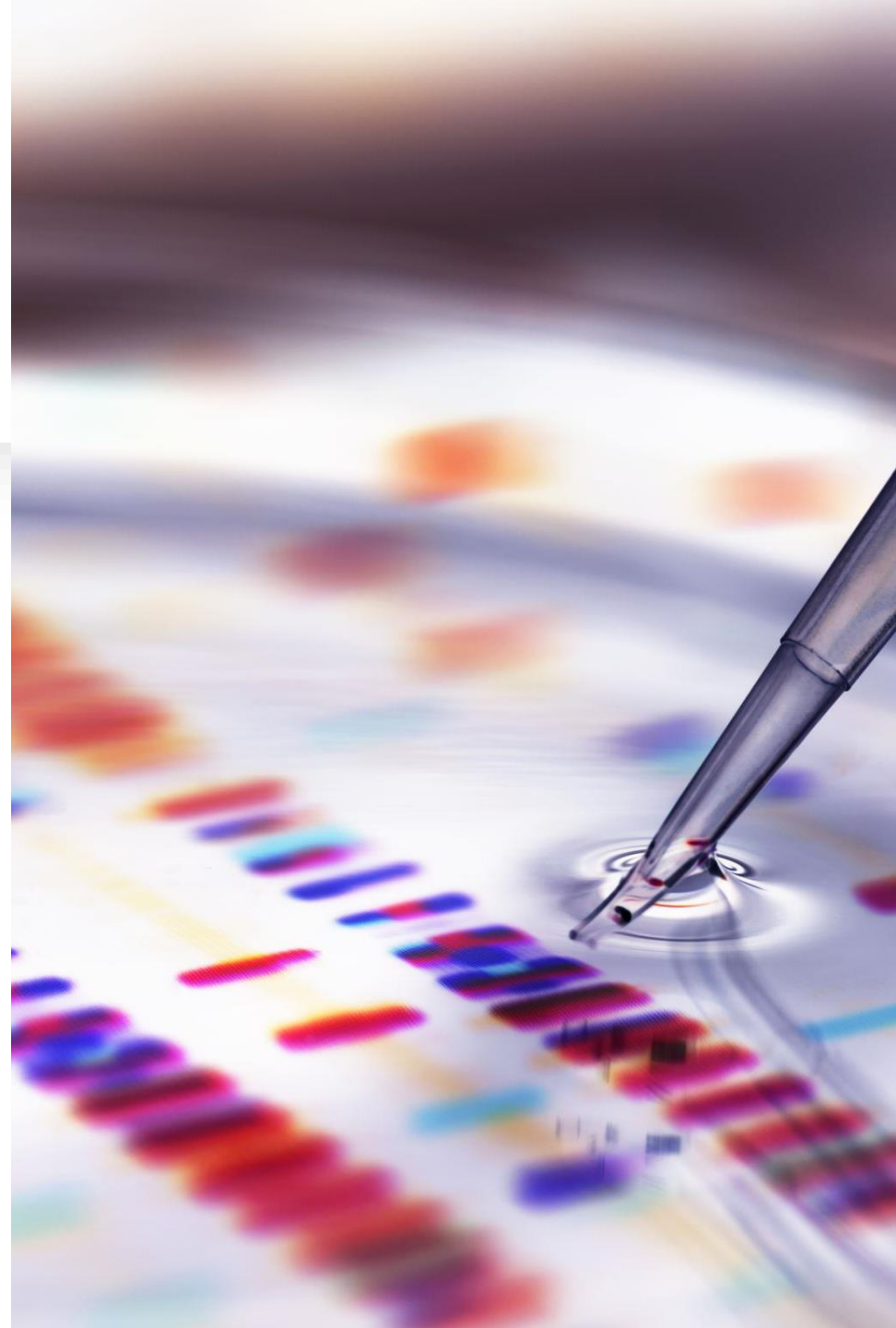
Management Accounting Education facing challenges

Interdisciplinary Research (Practice-based) to rethink managerial control theory and explore learning solutions under new paradigms

Instructional strategies and models for technology-driven learning solutions for development of cognitive and behavioural skills

KPI design simulation tool **AI-enhancement**

- AI-driven tools incorporated into the learning process to elevate immersive learning;
 1. AI literacy activities (in the preparation phase)
 2. Using chatbot in phase (1) of preparation of the KPI dashboard with web search tools; this activity can be included in the section “ Library.”
 3. Using Chatgpt to refine assessment preparation under teachers’ guidelines
- AI can support existing activities by helping teachers create content to manage those activities;
 1. Creating personalised scenarios at three main steps of the preparation of the business road test
 2. Generative AI used by teachers to generative video/ 360 images via the VR immersive learning platform



Follow us..

- Please follow us on Huyixiang (沪羿祥) EduLab to know more about projects and publications around the learning prototype
- Visit www.huyixiang.com.cn
- Register as member of the online learning community



Huyixiang office 沪羿祥



Scan the QR code to add me as friend

Publications

- Le Corre JY., Xu, S. (2023) Immersive Learning in Management Accounting Education: A Prototype of Classroom-as-Organization Supported by Learning Management System and Virtual Reality In: Harnessing Technology for Knowledge Transfer in Accountancy, Auditing, and Finance, DOI: 10.4018/979-8-3693-1331-2

THANK YOU

