

CICID 10th Anniversary Conference - 31 May 2013

Synergising Supply Chains for Total Asset Management

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OVERVIEW

1. **State of Play** and needed **Game Change**
2. Synergising Supply Chains – in PM (Project Management)
- through RIVANS (Relationally Integrated Value Networks)
3. Extending RIVANS to AM (Asset Management)
..... and to TAM (Total Asset Management)
4. Hong Kong based study on 'RIVANS for TAM'
5. **Game Plan** and **Game Changers**

Background – State of Play

Infrastructure Project Management (PM) supply chains –
on planning, design and construction, up to delivery of
the built asset –

often work independently *from*

Infrastructure Asset Management (AM) supply chains –
on operation, maintenance, usage facilitation and
possibly demolition and materials recycling)

Interactions and Communications are usually limited
between these supply chains

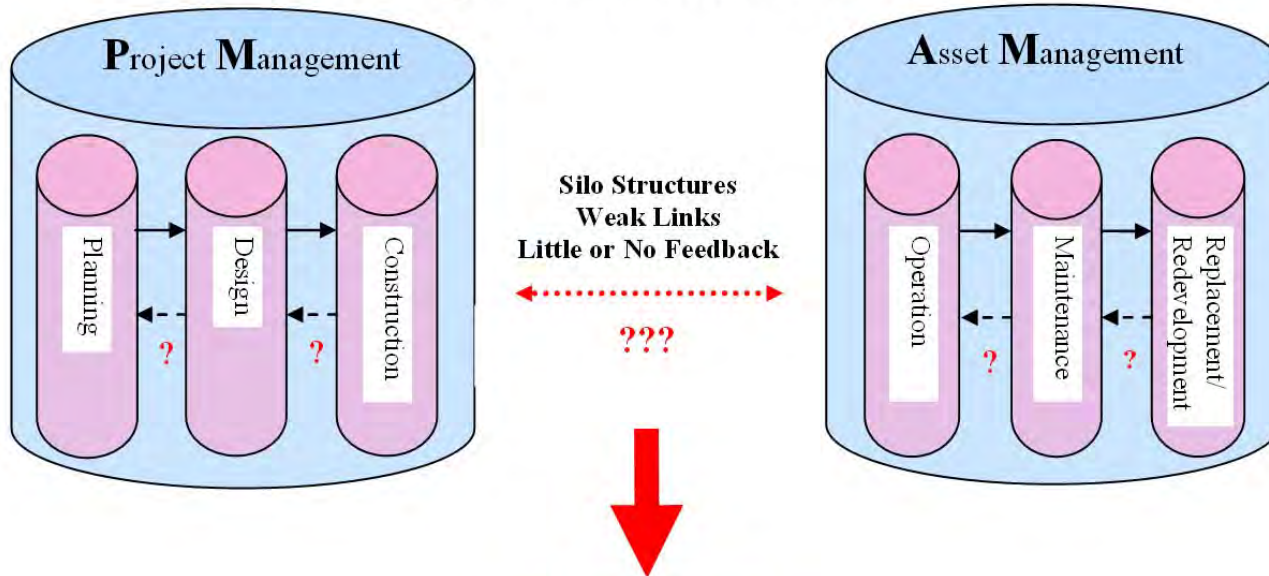
Needed - GAME CHANGE

- **Emerging dominant drivers** in built infrastructure:
End-user satisfaction, sustainable buildings, lifecycle costs, durable designs, designing and constructing for maintainability, operability and deconstruction
- **Working relationships** between PM and AM
 - also becoming important
 - *but still difficult!*
- **Synergies** - *with mutual benefits and enhanced value* through closer supply chain integration and collaboration between PM and AM seem possible through better *knowledge exchange and ..?*
 - *but how?*

Many Questions but Core Question

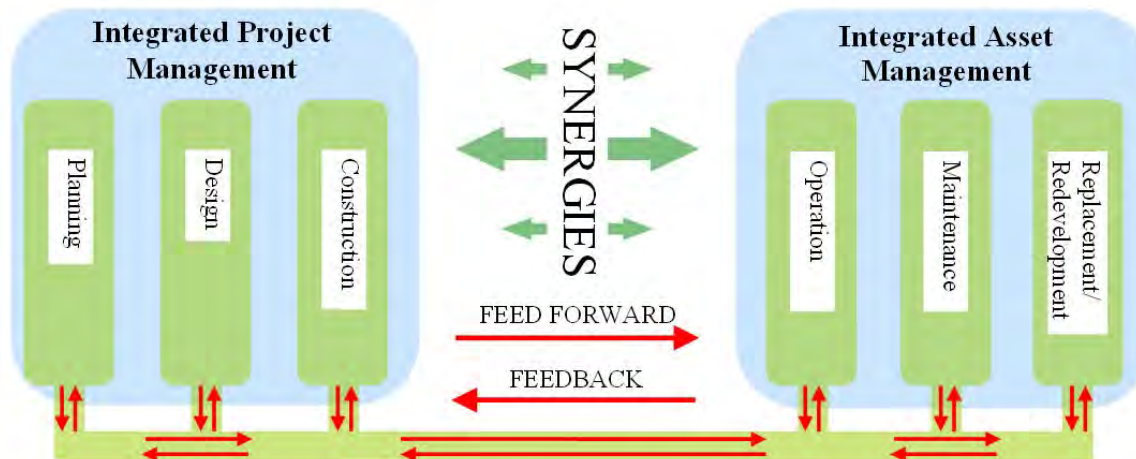
How to Move FROM:

'One-way flows' in typical built infrastructure management scenarios



TO TARGET:

Higher Performance & Synergies through Integration & 'Two-way Knowledge flows'

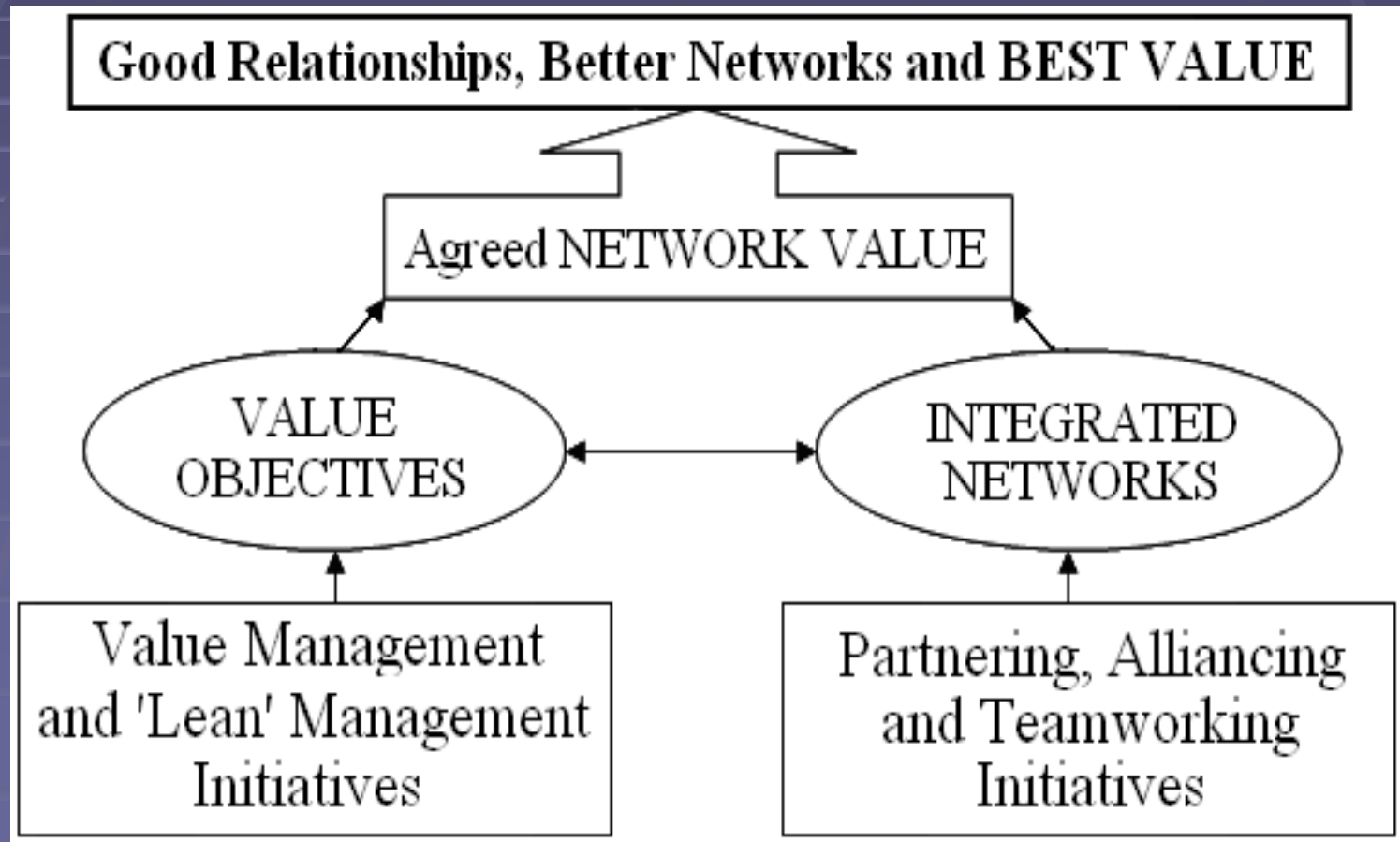


-Focusing firstly on PM: A Tale of Two Targets - **RIVANS**

- Targeted: (1) **Value** from 1950's; (2) **Integrated Teams** from 1990's
- 2 separate targets?
Or double-barreled approach to Triple Bottom Line: People, Profit & Planet
- **Relationally Integrated Value Networks (RIVANS)**
 - proposed from HK from mid- 2000's as a holistic framework for 'relational' integration aimed at high **overall value**
 - 'super-charged supply chains ... great relationships & earned trust ... empowers superior integration & teamworking ... helps to agree & achieve common value targets'
- **Relational Integration** extends **beyond** typical **structural / functional integration** approaches such as **Design-Build (DB)** or **Design-Build-Operate (DBO)**
- **Added Incentive to 'integration' through 'focus on VALUE'**
 - transcends Partnering, Alliancing, Framework Agreements, Integrated Project Delivery
 - cross-linked Value Networks with common value objectives
 - turbo-charged and jointly committed

RIVANS in PM

- RIVANS framework helps to **incentivise** and **align participant value streams** that may otherwise diverge due to **conflicting value objectives and agendas**

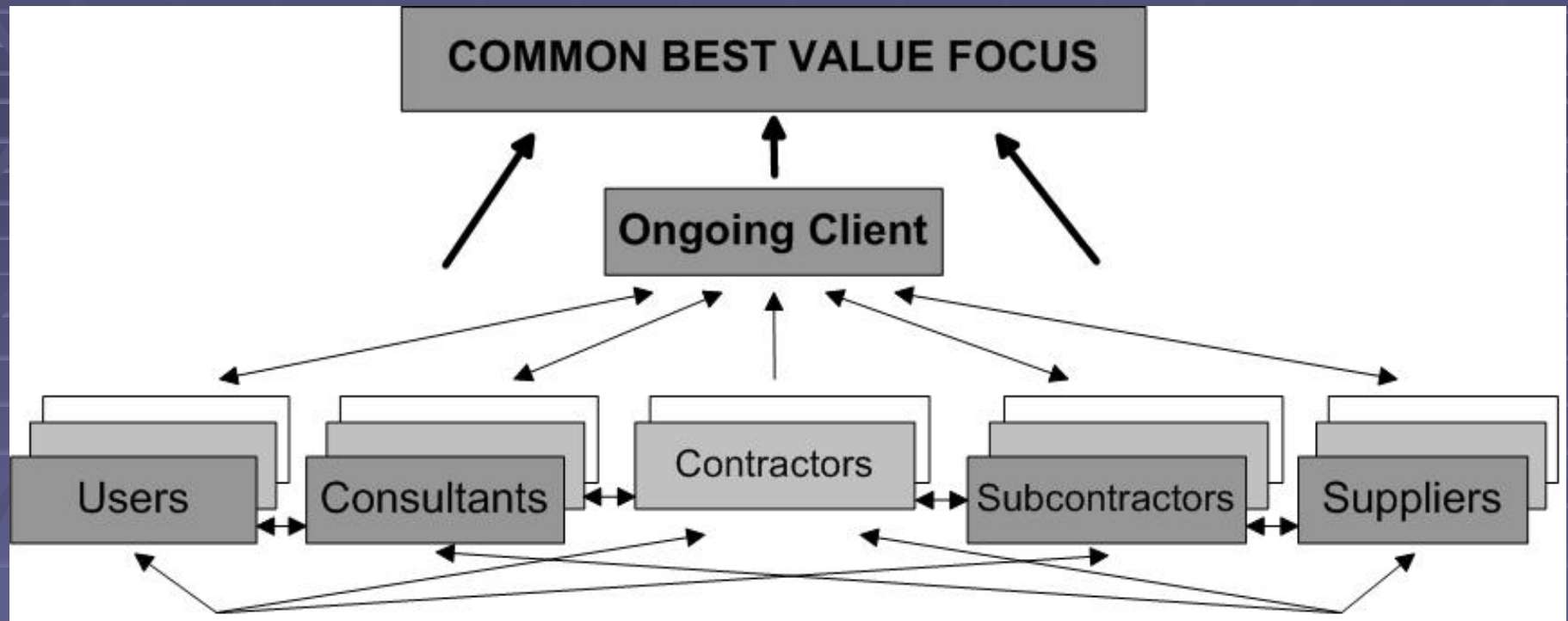


RIVANS Workshops I & II

- I - 01 Dec 2007 – “Enhancing Performance and Overall Value through RIVANS”
- II - 31 May 2008 - Boosting value by building RIVANS



RIVANS of an 'Ongoing' Client - in PM only



Alternative frameworks are available for 'On-Off' or 'One-off' Clients

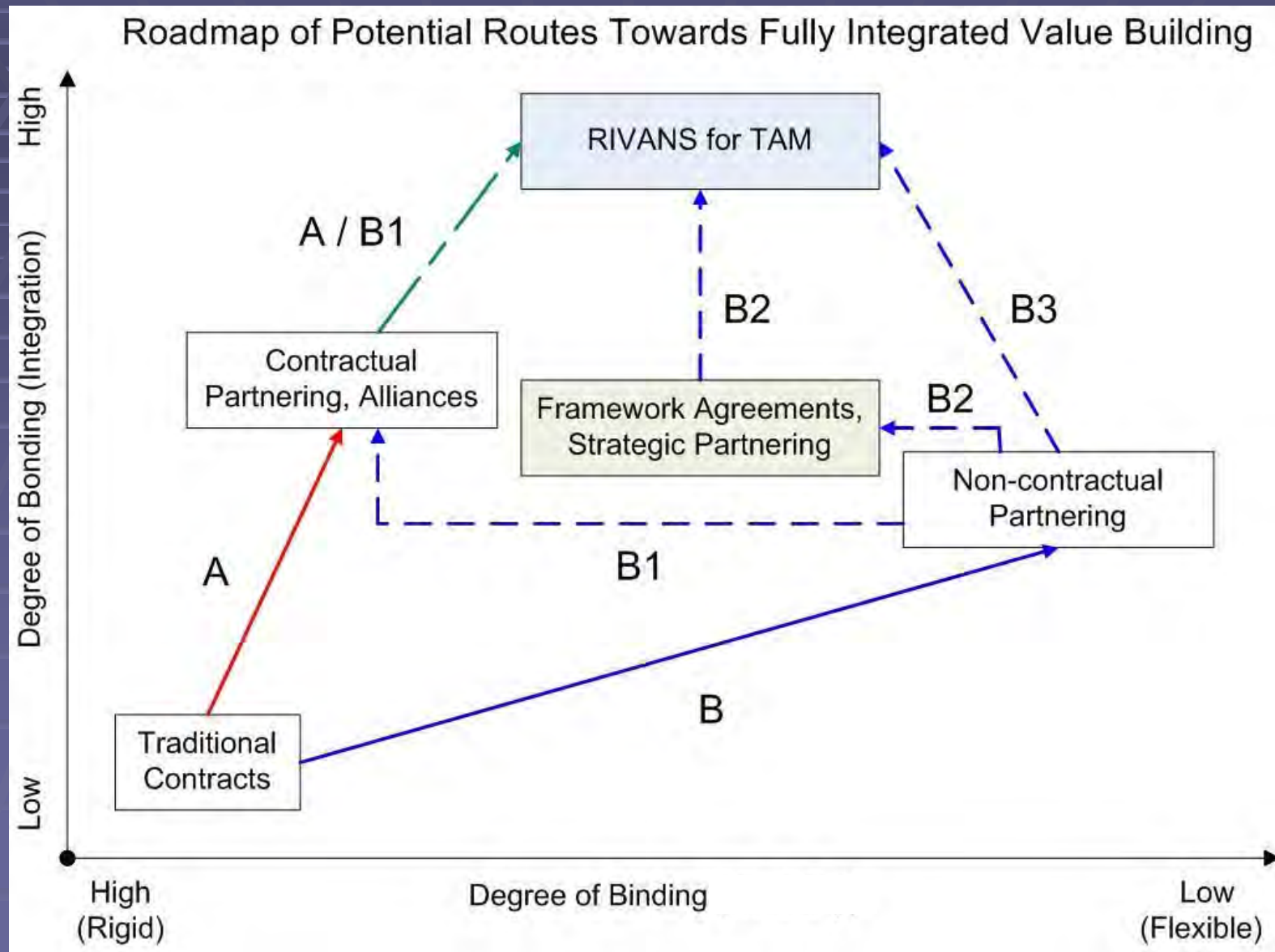
e.g. 'One-off' Clients (one construction project only) may rely on a well established Main Contractor's (or Consultant's) RIVANS

CAVEAT – retain 'competitive elements while co-operating:
CO-OPETITION

Extending RIVANS to AM

- **Transactions** - *limited* between PM and AM are in traditional procurement modes – supply chains are mobilised at different times etc.
- **Relationships** - *may* arise (e.g. if recalling preferred sub-contractors/ suppliers), but fragmented & limited
- **Functions** - *should* overlap – e.g. in ‘**designing for maintainability**’ & ‘**building for sustainability**’.
But ...little interactions, less feedback and feedforward ...
hence more rework, waste & under-performance

Roadmap of possible Routes towards Higher Value through Integrated Teamworking



RIVANS for TAM

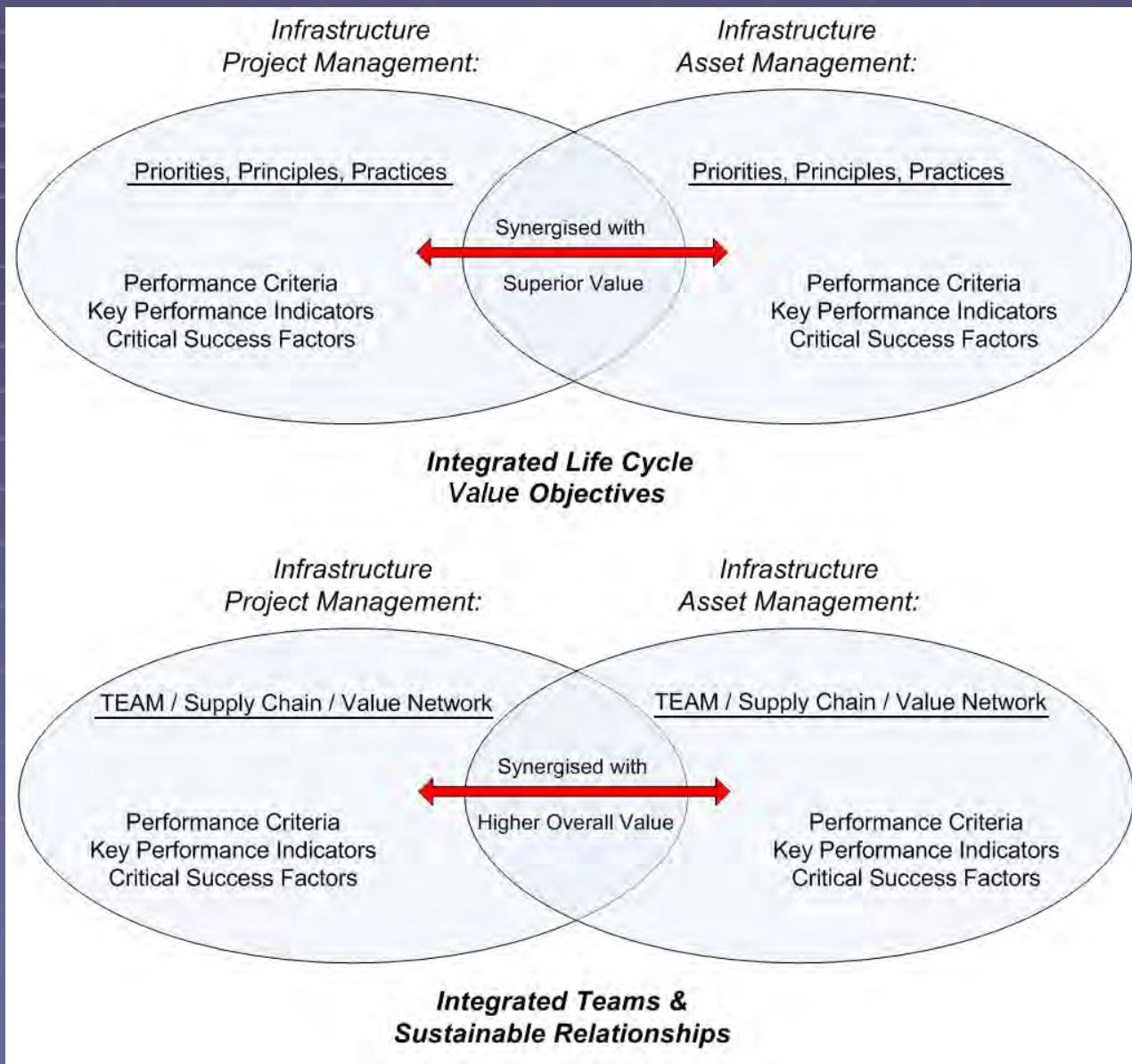
- *HKU-sponsored CICID-led research project:*

Relationally Integrated Value Networks (RIVANS)
for Total Asset Management (TAM)

- *Main aims:*

- (A) identify synergies and added value that can be achieved through well-structured and focused collaboration between PM and AM supply chains; *and*
- (B) develop concepts and working arrangements for RIVANS for TAM

Identifying Synergies between PM and AM – from 'Value Objectives' to Supply Chains / Teams



RIVANS for TAM – Project activities

A. HONG KONG – parent study

1. Questionnaire survey
2. Case study in an organisation engaged in both PM and AM
3. Workshop
4. Interviews

B. Parallel studies Overseas (based on HK formats)

1. Questionnaire Surveys – UK, Singapore & Sri Lanka
2. Interviews – UK & Sri Lanka
3. Case Studies – UK & Sri Lanka

RIVANS for TAM **Workshop** - Nov 2012

‘Extending RIVANS from IPM to IAM’ - 03 Nov 2012 in HK



Sample Findings from HK:

- From Qstnr.: **Top three aspects** - highest levels of agreement that **better value/ synergies can arise** from:
 1. **sharing** relevant information, e.g. building specs, as-built drawings and construction records - 4.4 (on a 1 to 5 scale)
 2. **life-cycle optimization** options and opportunities - 4.4
 3. addressing **sustainability** issues - 4.2
- From Case Study, Workshop & Interviews:
 - Initiatives, good practices, challenges, lessons learnt & identified barriers can be building blocks for a RIVANS for TAM framework – to identify and/or develop good principles & practices.
 - Examples?sample 'broad' findings:

RIVANS for TAM project – Sample Findings from HK

1. More + more effective **Knowledge-sharing channels** - e.g. for feedback to 'design for maintainability' etc.
 - thru. '**Early Operator Involvement**' ... is it always worth it? Costs/ benefits?
2. Protect + Enhance benefits to **end users** – greater end-user & client engagement
3. '**Whole Life Systems Engineering**' – or VM Engineer/ Integration Engineer/ Life-Cycle Engineer'? But
4. **Incentives-Penalties** + build into **Supply-chain Selection criteria**

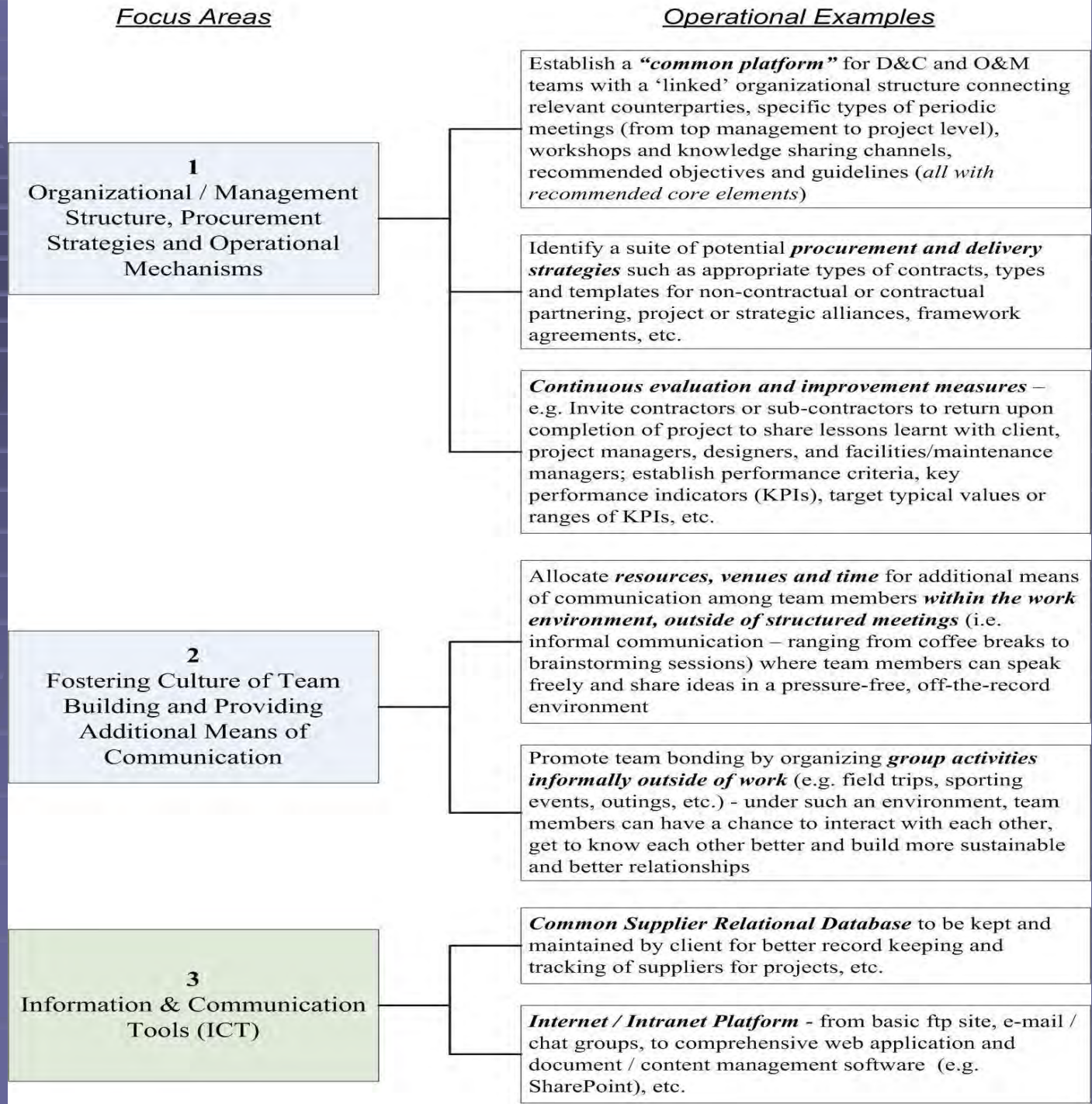
For details, see Workshop Report -
http://www.civil.hku.hk/cicid/3_events.htm

CAVEATS: (A) RIVANS - more difficult & costly, but potentially more beneficial in TAM
(B) **foster Co-opetition**; prevent abuse.

+ Suggested Focus Areas + Preliminary Templates: ...

EXAMPLES:

Initial Focus Areas - for targeting 'RIVANS for TAM'



‘Operational Examples’ - in 1 of the above 3 suggested Focus Areas - for Implementing RIVANS for TAM

Focus Areas

Operational Examples

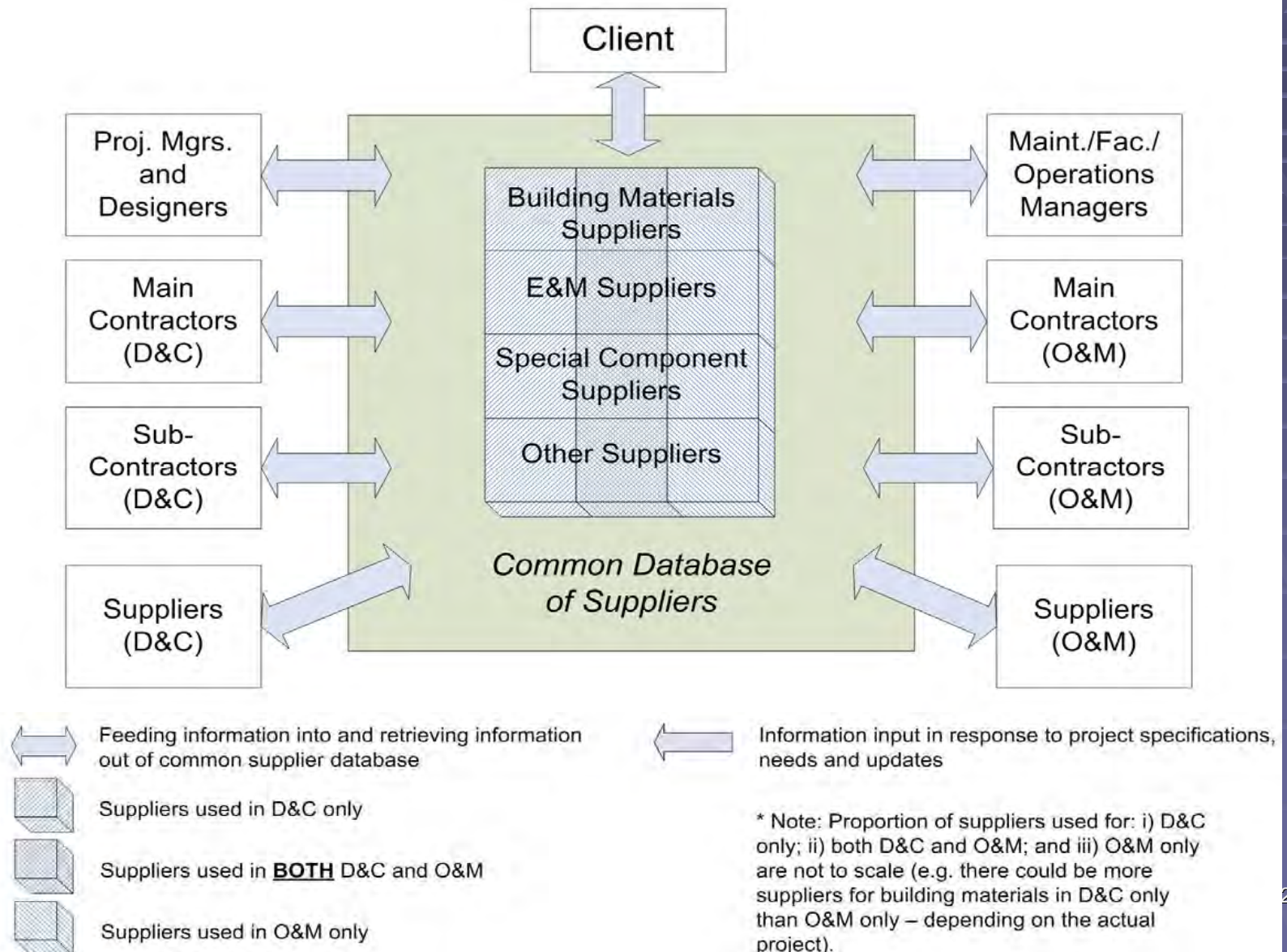
1
Organizational / Management
Structure, Procurement
Strategies and Operational
Mechanisms

Establish a “**common platform**” for D&C and O&M teams with a ‘linked’ organizational structure connecting relevant counterparties, specific types of periodic meetings (from top management to project level), workshops and knowledge sharing channels, recommended objectives and guidelines (*all with recommended core elements*)

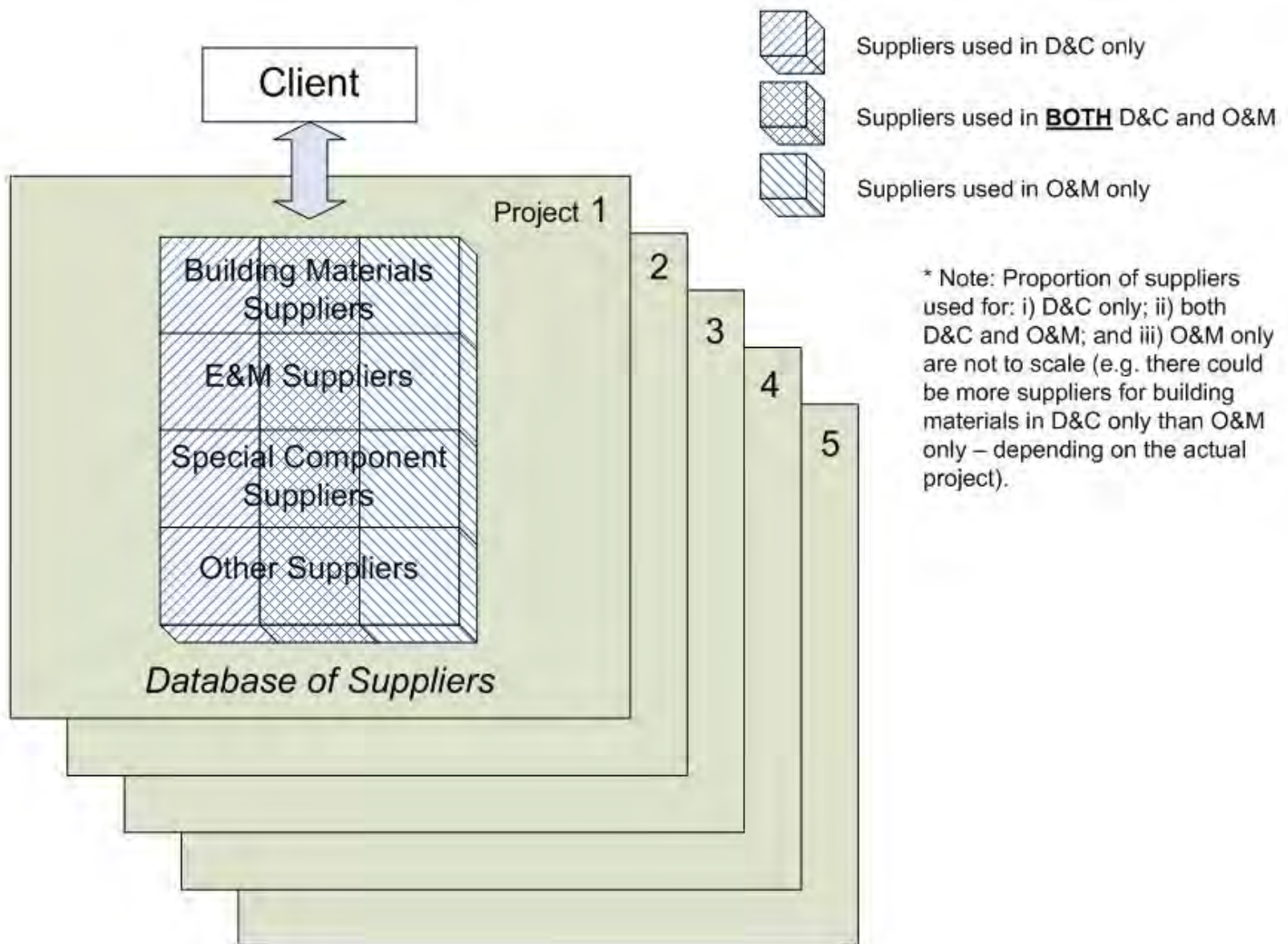
Identify a suite of potential **procurement and delivery strategies** such as appropriate types of contracts, types and templates for non-contractual or contractual partnering, project or strategic alliances, framework agreements, etc.

Continuous evaluation and improvement measures – e.g. Invite contractors or sub-contractors to return upon completion of project to share lessons learnt with client, project managers, designers, and facilities/maintenance managers; establish performance criteria, key performance indicators (KPIs), target typical values or ranges of KPIs, etc.

2-way Information Input and Access in proposed Common Supplier Database (for a Single Project)



'Large Client' maintained - **multiple, interlinked, relational databases** - for a Project portfolio



RIVANS for TAM is **not alone** in this vision-mission! Examples:

1. From HKU: drilling into specifics – Research with Housing Authority on **‘Capacity Building of SMEs for Sustainable Housing Development’** – to strengthen weak links in supply chains
2. Elsewhere in HK: HK Institute of Housing – recent focus area - to link property managers/ operators to design teams
3. Elsewhere: Extending **BIM** – through to asset management, but
4. Anywhere else (that you know)? - happening? ... should be happening?
5. Internationally (although ‘made in HK!’):
Journal linking PM to AM - connecting Planning-Designing-Constructing-Delivering to Operations-Maintenance-Sustenance

BEPAM – an international journal

- with similar **Game Plan** – **Game Changer** in journals landscape –
bridges divide between **PM** & **Asset/ Facilities Management** journals



So can we really 'Synergise Supply Chains for TAM'?

*Business case to link PM to AM - so supply chains
learn from each other, perform better together & deliver
best value*

with a new Game Plan ...

**Could this be a 'Game Changer'
towards more sustainable Built Assets?**

*... think far, plan well,
engage all, start small ... ?*