

**Incorporating Principles of Sustainable Development  
within Design & Delivery of Major Projects:  
Study Undertaken for the Institution of Civil Engineers &  
The Actuarial Profession**

**Sustainable Development and the Risk  
Analysis & Management of Major Projects:  
Some important observations**

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- **New Mission Statement of ICE**

- The new ICE mission statement** has the current overall vision of “civil engineers at the heart of society, delivering sustainable development through knowledge, skills and professional expertise.”
- This is a challenging mission statement** that seeks to become more sensitive in practice to the requirements of sustainable development in *all* activities involving civil engineering expertise, including the planning, appraisal and implementation of major projects.

- **The RAMP Handbook**

- ❑ **The latest edition of the RAMP Handbook**, to which the findings of this Study's commissioned Working Papers on appraisal are to be especially related, was published in 2005. The Handbook is directed towards those engaged in the appraisal and management of project risk, *anywhere* in the world.
- ❑ **The RAMP process** takes a 'whole lifetime' strategic approach to risk, and especially targets possible financial implications. It appears particularly oriented towards decision-makers, including project sponsors and investors in the private sector.

- **Project definition**

- The definition of a project** offered by the RAMP handbook is “any organised business activity where an investment is made.”
  
- Our Study looks to a broader definition of a project** - addressing the end result and finite nature of projects - seeking to incorporate non-business dimensions and activities concerning the welfare outcomes of projects, including the social and environmental contributions they make to society and the public policies that such projects are deemed to serve.

- **Project definition (cont.)**

- ❑ **We see the incorporation of sustainable development** in the planning, appraisal and delivery of projects requiring a broader take on project definition than that offered by RAMP.
- ❑ **The issue of project definition is further complicated** by the fact that judgements about the ‘success’ of many major projects are in fact *not* made on the basis of a project at all but the combined benefits of a *programme of projects*.
- ❑ **This call for a more precise usage of terminology** requires greater clarity as to the physical, economic, social and institutional boundaries of a project and the real (as opposed to presumed) criteria employed to assess their success and to base their approval.

- **Project definition (cont.)**

- ❑ **The issue of the definition of projects** also highlights concerns regarding the extent any perceived nature of them as **‘closed systems’** can remain valid when there is all too often a considerable lapse of time between project appraisal and delivery, and when major changes occur in the operating environments which can radically alter their business case and lead to the retrospective **‘moving of goal posts’** in the criteria/targets employed to assess their **‘success’**.
- ❑ **The findings of the OMEGA Centre** in its international research of MUTPS suggest that such projects are best perceived as commencing as **‘open systems’**; which then need to be seen as **‘closed systems’** while under construction and delivery, and once again viewed as **‘open systems’** post project completion when monitoring and evaluating their contributions.

- **The importance of context**

- **The preceding discussion alludes to the importance of the context to a project** (or indeed programme of projects); its national and local development and policy contexts, its cultural and institutional contexts and the contexts of project stakeholder interests that drive their expectations.
  
- **Whereas major projects in the past have largely had as their underlying principal aim the delivery of economic growth *above all else***, today this aim is challenged, compromised and conditioned (at least in the rhetoric) by a broader agenda of multiple development aims as reflected in the Sustainable Development Concept cum vision which *in effect* re-defines the order of development priorities that major projects should contribute to and *even* the manner they should serve such goals.

- **The importance of context (cont.)**

- ❑ While the sustainable development vision constitutes a new working environment for the planning, appraisal and delivery of major projects, **it does *not* mean that such projects are exempt from financial viability tests of project approval.**
- ❑ **Such viability tests should also be framed in the form of sustainability assessments** that ensure short term achievements *do not* jeopardize desired long term ends, and that mid-term actions realistically translate short-term aims into long term gains; albeit on the basis of a broader set of criteria than predominantly financial or economic (see later discussion on the sustainable business case).



- **The importance of context (cont.)**

- ❑ The vision of sustainable development has been growing in global significance for around two decades now, **with the Brundtland Report of 1987 and the Kyoto Conference of 1992 providing particular markers**. It is increasingly being moved beyond the rhetoric, *but not without difficulty*, as efforts to operationalise it has taken some time to translate into meaningful terms.
- ❑ **A growing awareness and intelligence gathering regarding issues such as climate change, emissions and energy shortages** have led to a realization that projects are today having to be planned in a new context which sees *how we use the natural environment and our resources, and how we apply them to the development of the built environment, as important if not more important than the delivery of economic growth benefits*.

- **The importance of context (cont.)**

- ❑ As indicated in our synthesis report of the OMEGA commissioned Working Papers of different aspects of project appraisal of major projects, **the Sustainable Development Vision has been widely adopted as a key policy reference that has proven very difficult to apply** with numerous tensions emerging between global and local concerns and short and long terms goals.
- ❑ Such tensions have been associated with the need to focus on environmental and social impacts of projects and efforts to link these with concerns regarding economic sustainability. **The OMEGA Centre has added a fourth dimension, namely, that of institutional sustainability.** Here the premise is employed that visions of sustainability (whether economic, environmental or social) *cannot* be sustained without sustainable institutions and competent governance.

- **The importance of context (cont.)**

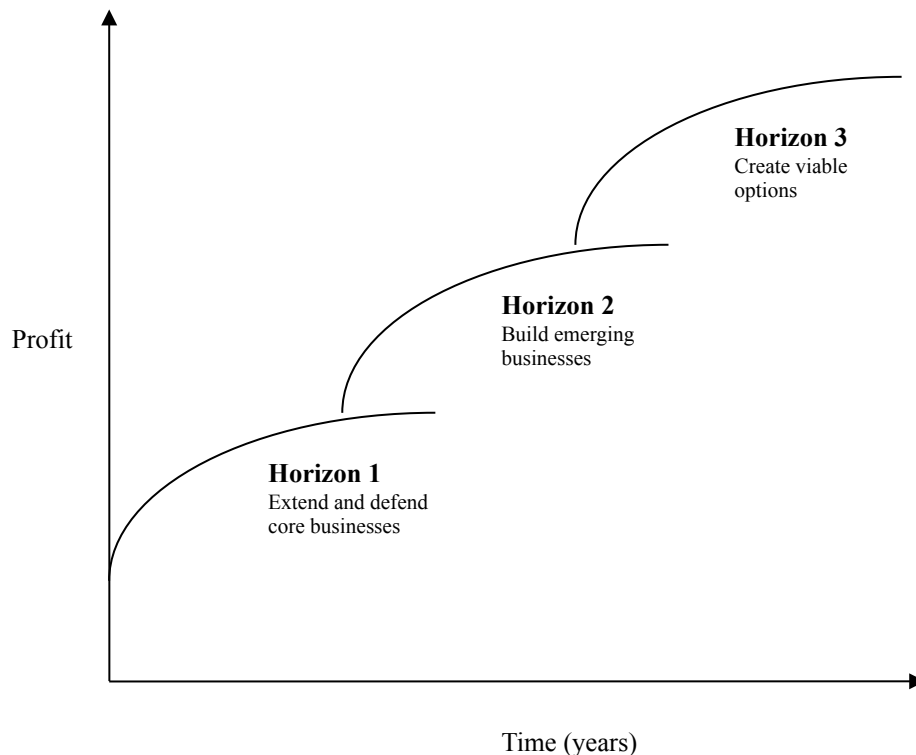
- ❑ The appraisal of major project developments is further complicated by the fact that such projects **typically involve a whole host of different stakeholders (with different levels of influence)**; most whom are *not* themselves decision makers or professionals engaged with the projects but are potentially impacted by them.
- ❑ The discourse among these stakeholders, we suggest, should be seen as part of the context in which projects are planned, appraised and managed (or mis-managed as the case might be). **This reflects much more of an evolutionary/organic process than a mechanistic or even bureaucratic one**, notwithstanding the fact that at the time of project construction and delivery this ‘open-evolutionary system’ needs to be suspended in favour of more mechanistic target-led and financially monitored procedures.

- **The RAMP methodology**

- ❑ **If project promoters are seeking to genuinely pursue sustainable development goals**, they then need to *also* consider how far they are willing (and able) to secure real environmental and social security ends which the project could yield on a sustained basis over and above the economic results. This requires project promoters to use much broader risk assessment processes to establish the possible environmental and social outcomes on sustainable development more fully, whether they manifest themselves within the project or outside it.
  
- ❑ **If the project is to provide the financial return expected**, then *all* the factors which may have a potentially significant impact (whether directly or indirectly) *must* be soundly appraised and have sufficient mitigation provided for. This requires very considerable application and thought.

- **Putting sustainable development visions into practice**
  - ❑ **Our starting point for the incorporation of social and environmental dimensions of sustainability must be with the definition of what sustainable development is.** We have accepted the definition from the Brundtland Report(1987) which states: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”
  - ❑ **As regards our treatment of project risks (both emanating from within projects and exogenous to them), we look to the consideration and acceptance of uncertainty and the necessity of taking calculated risks as expressed in the ‘precautionary principle’.** This was incorporated into the 1992 Rio Declaration on Environment and Development as follows: “Where there are threats of serious or irreversible damage, lack of full scientific certainty *shall not* be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

# The Three Horizons and Growth Staircase: Toward a corporate strategy for coping with globalization, competition forces and dangers of short termism



- **Horizon 1** is preoccupied with the extension and defence of core businesses
- **Horizon 2** is focused on the building of emerging businesses
- **Horizon 3** is concerned with the creation of viable options to current businesses

**Source:** Baghai et al, (1999: 130) *The Alchemy of Growth: Kickstarting and sustaining growth in your company*, Texere, London

- **Implications of Study findings for RAMP**

- ❑ **RAMP must go beyond the Cost Benefit Analysis route in its principal appraisal tasks.** (Some 80+ per cent of those interviewed in an international survey of key decision-makers in past major projects indicated that while still important the CBA was insufficient in itself to provide a basis for final judgments as to whether to proceed or not with a project.
- ❑ **Multi Criteria Analysis a more comprehensive and informative basis for project appraisal** with CBA informing this in the appropriate areas of concerns. Some 60+ per cent of those interviewed in the same survey supported this premise.
- ❑ **Sustainable Development Frameworks offer an improved basis for a more holistic appraisal of major projects.** While 50+ per cent of those interviewed supported this premise, more than one third considered such frameworks incomplete and in need of further improvement.

- **Ten questions that any RAMP project exercise needs to answer:**
  - Quest.#1:** What is the project (its boundaries, composition etc) and its objectives?
  - Quest.#2:** What will happen if the project is/is not implemented?
  - Quest.#3:** Is the project the best of the alternatives considered to deliver the vision and related aims sought?
  - Quest.#4:** Are there any separable components of the project that need to be noted and how good are they when phased separately as a means of injecting flexibility into the process?



- Quest.#5:** Who are the winners and losers of the project (both in the short run and long term) and from which perspective?
- Quest.#6:** Is the project financially sustainable and if so at what stage does this long-term viability become evident?
- Quest.#7:** What is the project's fiscal impact on key stakeholders overall in the short run, middle term and long run?
- Quest.#8:** What are the project's environmental impacts in the short run, middle term and long run?
- Quest.#9:** Is the project worthwhile in social and community terms in the short run, middle term and long run?
- Quest.#10:** Is the project risky on *any* of the above fronts, and if so, on what basis and to which degree?