

Note

Projects often include situations when things can ‘go wrong’ — from simple delays to grave accidents. Such predicaments are generally expressed as ‘risks’, and are approached in a variety of ways (Perdicoulis, 2015a).

## 1 Overview

The following risk analyses — presented in generic designations and grouped by interest perspectives or ‘schools of thought’ — may be used either *in combination*, when offering complementary perspectives (e.g. time and space), or as *standalone* if deemed satisfactory for the needs of the sector or application (e.g. insurance company, industrial facility, electrical installation project). The choice must be not only appropriate, but also made well in advance and implemented properly (Perdicoulis, 2015a).

— *facts* —

TEMPORAL ANALYSIS — investigates the *time* (e.g. instance, frequency, duration, recurrence) where risks have occurred and/ or are likely to occur

SPATIAL ANALYSIS — investigates the *space* (e.g. location, extension, pattern) where risks have occurred and/ or are likely to occur

— *dynamics* —

CAUSALITY ANALYSIS (SYSTEM) — investigates causes, effects, and their relations (Perdicoulis, 2010); *ex ante* and/ or *ex post*

PROCEDURAL ANALYSIS (PROCESS) — investigates actual and potential *errors* in the way (e.g. sequence, method, people) that actions are carried out (e.g. by design, tradition, chance)

— *economics* —

PROBABILITY ANALYSIS — investigates patterns of occurrence, typically in terms of *frequency* and/ or *likelihood*; typically the base for *liability* and *financial* analyses

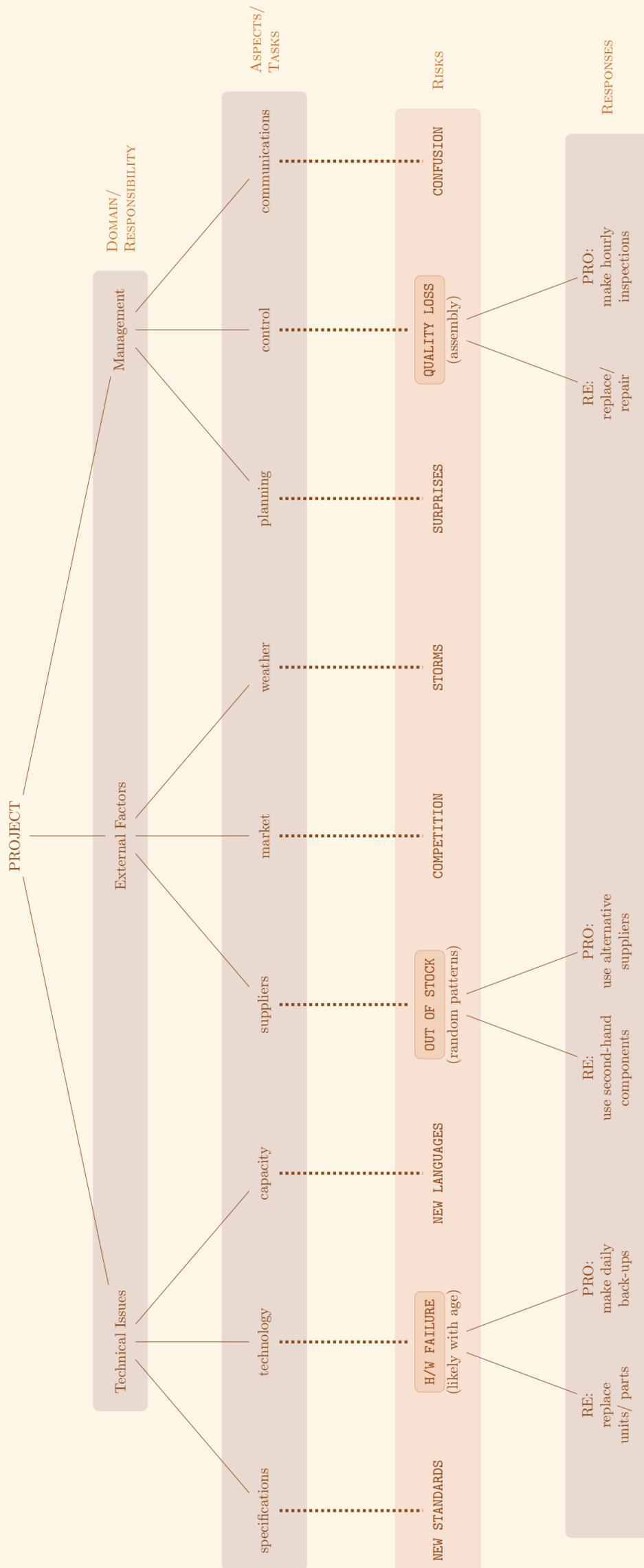
LIABILITY ANALYSIS — attributes legal responsibilities; may require causality analysis; *ex ante* and/ or *ex post*; typically associated with *insurance policies*

FINANCIAL ANALYSIS — estimates monetary values for the identified (e.g. experienced, forecast) risks; typically associated with *budgeting*

## 2 Risk Breakdown Structure (RiBS)

A comprehensive and practical way to deal with the risks of a project — and thus often encountered in project management — is to create a risk breakdown structure (RiBS). This is a hierarchical representation of the aspects of the project that may be the cause of potential risks (PMI, 2013, p.280).

The value of RiBS is organisational: it helps to organise and display the activities of the project that are likely to contain risks. As with all other breakdown structures (Perdicoulis, 2013), the configuration and content of the RiBS must be decided per project.



Generic RiBS diagram with critical risks (in darker boxes), associations, and comments; responses include both pro- and re-active alternatives

## Bibliography

ISO — International Organization for Standardization (2009) *ISO 31000 — Risk Management: Principles and Guidelines*. Geneva: ISO.

ISO — International Organization for Standardization (2012) *ISO 21500 — Guidance on Project Management*. Geneva: ISO.

PMI — Project Management Institute (2013) *A Guide to the Project Management Body of Knowledge* (5th ed). Newtown Square, PA: PMI.

Perdicoulis, A. (2015c) Alternative views of the process. *Systems Planner*, **36**.

Perdicoulis, A. (2015b) Iterations in planning and management. *Systems Planner*, **34**.

Perdicoulis, A. (2015a) *Project Management*. Perdicoulis Publishing: Book Division, Praxis Primer Series.

Perdicoulis, A. (2013) Hierarchical breakdown structures. *Systems Planner*, **23**.

Perdicoulis, A. (2010) *Systems Thinking and Decision Making in Urban and Environmental Planning*. Cheltenham: Edward Elgar.