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Technological shift and soft-competition as guidelines for decision-making in the MoonBase project

by

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A proper management of the MoonBase project will be a key variable of success. At the end of this speech, a proposal for a possible organizational and institutional management will be provided, in the context of the anticipation trajectories that it will be possible to formulate. A deeper thinking upon the impact of attaining MoonBase can offer an important contribution to project feasibility.

First, we fix some definitions to make as clear as possible what we are talking about.

We define ***technological shift*** any technological improvement or advancement, in different productive sectors, as characterized by a *"fuzzy-type" overlapping* between basic, intermediate and product technology.

We define as ***soft*** that kind of competition which is not a *per se* social strategy, but a means to pursue efficiency and efficacy in a dynamic and social context. Generally speaking, we want to refer to the "etymologic" sense of the word "cum-petere", which means "to research together", being competition, in this view, an instrument for societal wellbeing and not a scope/value for the society.

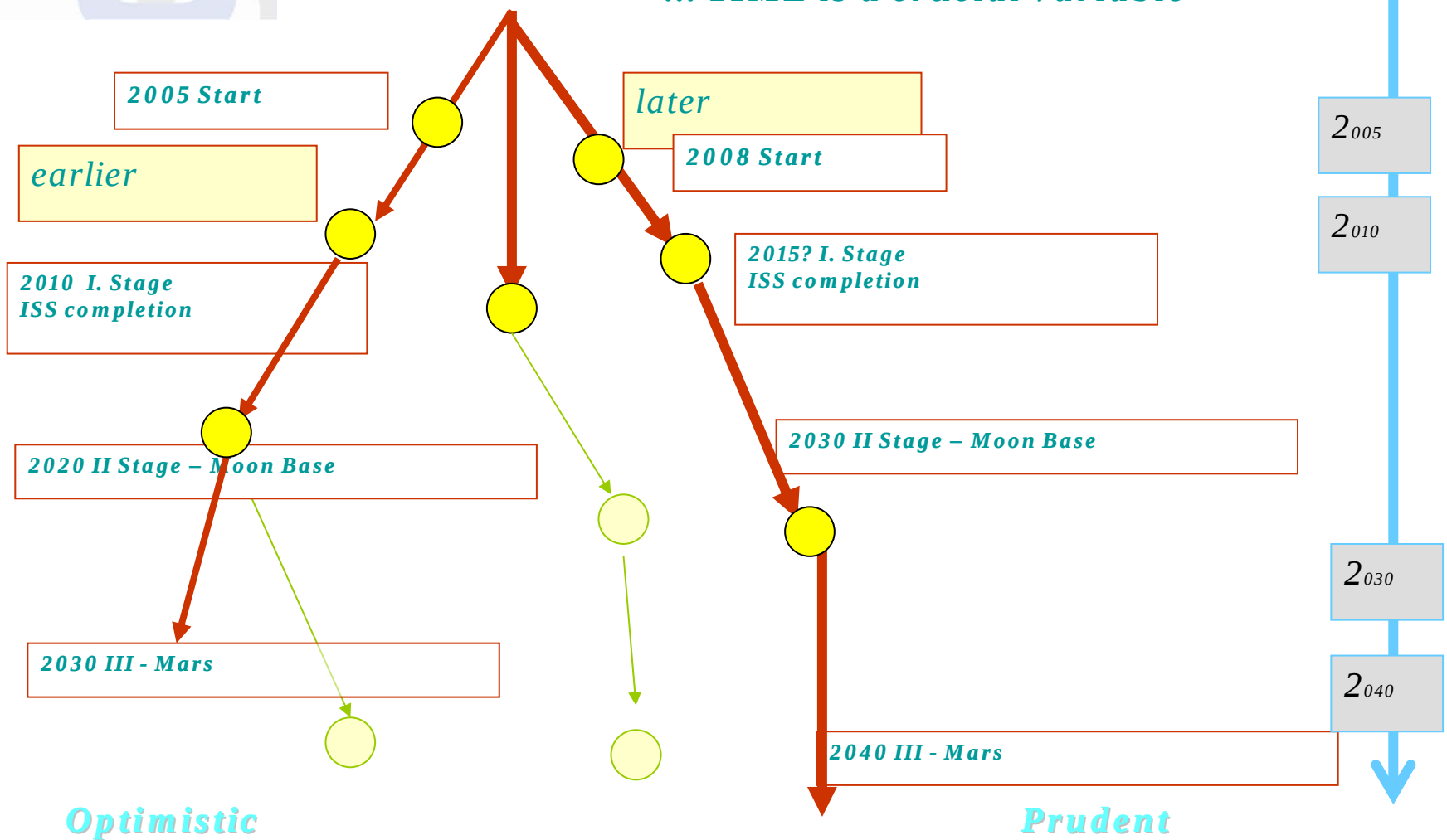
Where we were in Venice

At the first step of this workshop, in Venice, some of you may remember that we have foreseen as useful a flexible structure of the programme.

Starting from *ex-ante* defined boundary conditions (**political, financial, economic, strategic**), the construction of several alternative scenarios has been identified as the best tool to very take into account the time constraint.

Venice Scenarios ....

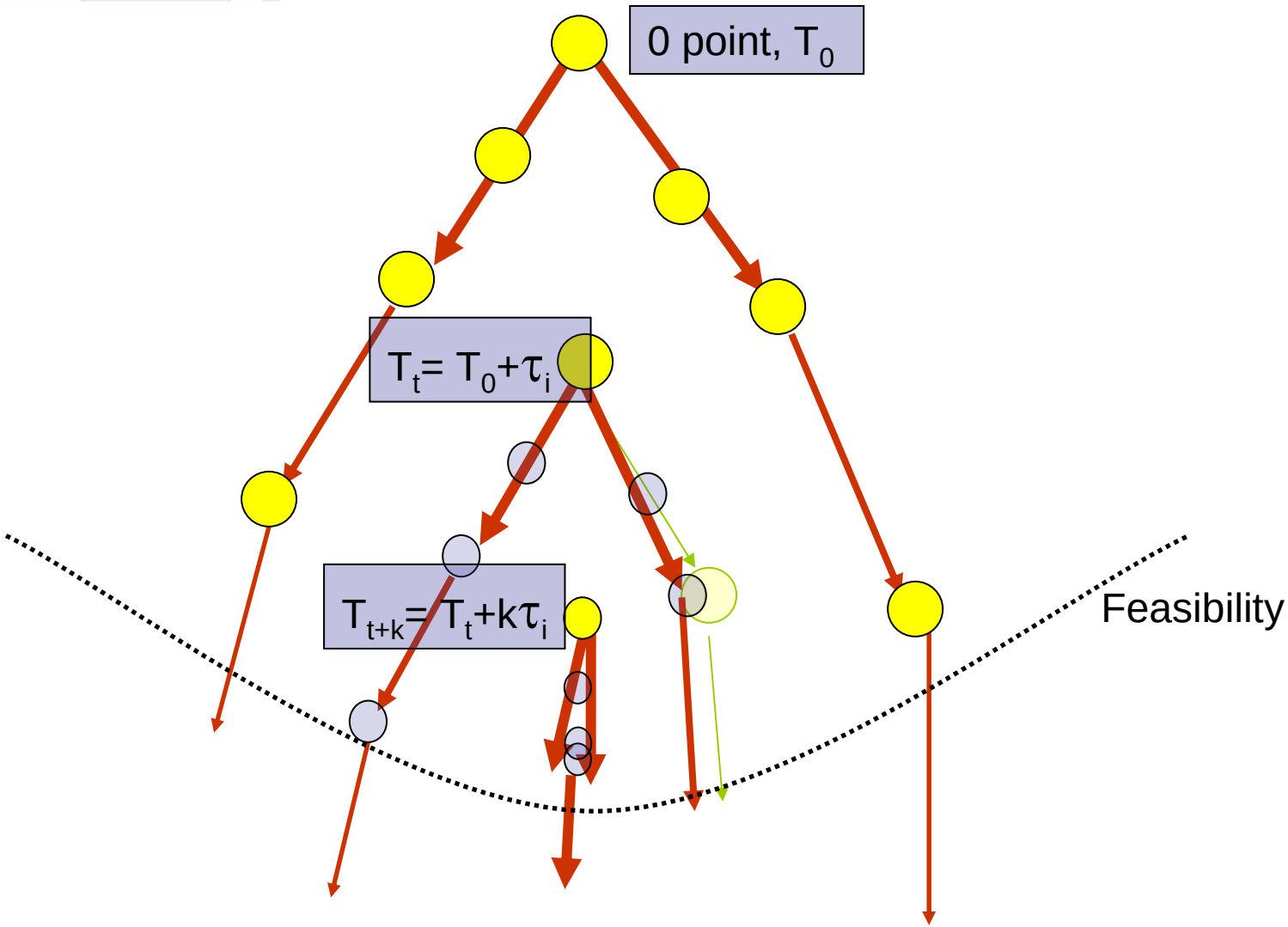
... TIME is a crucial variable



Moving ahead

- This preliminary Venice step has led to underpin the problems (a sort of picture, taken in T_0).
- To get a step forward, it is necessary to take into account that the 0 point from which we look at the future implementation and build the scenarios moves ahead, together with the project step-by-step progress. Formally, $T_t \longrightarrow T_{t-1} + \delta\tau_t\,(T_t - T_{t-1})$
- It is obviously true that the decisions depend upon the history, the memory the and realized experiences, but what we have called $\delta\tau_t(\cdot)$ is not a constant and, in time, it is a trajectory itself and depends on the learning processes and capability of decision-makers and managers.
- As we have seen in Venice, we are in the position to conceive several alternative scenarios to optimize the project implementation process, under given bound conditions. Venice scenarios are ***not optimal anymore***, if, as suggested by experience, the above mentioned bound conditions can shift over time.

Just-in-time Management



Just-in-time Management (2)

- Under this ***paradigm***, specifically during the start-up phase of the project and mainly referring to the results of the technological research, a consistent aid to proactively learning how to manage a complex and dynamic system (like MoonBase) is the availability of a ***common language*** between all the involved actors. This common language allows at least a shared and clever categorization of the essential themes of MoonBase. Furthermore, it fosters a correct perception and maximizes the efficiency of the whole stock of available information (data, results, opportunities and related possible extents).
- Once again, historical experience warns about the damages occurring from what we *ex-post* call ***self-realized prophecies***.

How to manage complexity

MoonBase has three arrows in the quiver. Nevertheless, the bow we have doesn't allow us to throw them and hit the target with the same ***confidence*** accuracy.

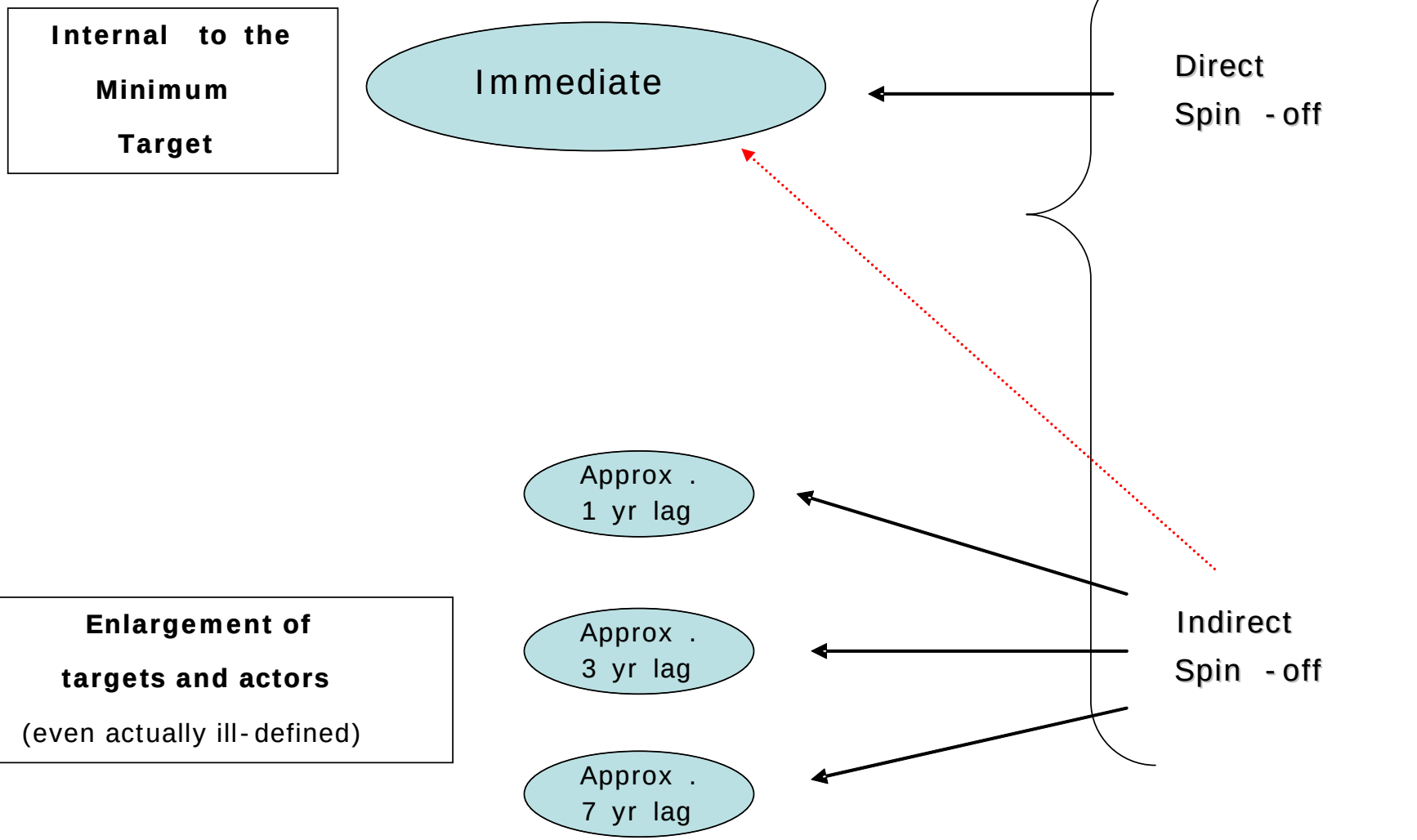
The first arrow is the agreement between the promoters. This has to be structured in such a way:

I. to put an effective starting point and set-up a realistic and narrow programme schedule and, at the same time,
II. to make possible the involvement, step-by-step, of further private and/or public actors in the project.

The second one (key factor: common language) is that the project has a well-defined minimum target. This can actually represent a ***strong feature***, if the project team will be able to consider the minimum target as a ***process*** and not as a single goal.

The third arrow is the possibility of inclusion in the management board also for new coming participating actors (both private and public, both commercial and research) with shares that will change over time, reflecting the respective degrees of involvement in the project.

Technology shift and involved actors



An Hypothesis for a **Management Institutional Framework**

In the light of the above considerations, we envisage that:

- The project management will be assured by the joint functioning of two different Boards: the **Technical Board** and the **Management Board**;
- The Management Board is, at the starting point, formed by the promoters. Their shares will reflect the financial involvement of each of them;
- The Management Board is an open entity that will also gather the participating actors that will enter MoonBase in the future;
- The Management Board has responsibility for the overall definition of the project and its final aims, as well as the publication of the “calls” by which private and public interested stakeholders will compete to become part of the project team and to be involved directly in MoonBase implementation;
- For the appointment of the Technical Board, the promoters will invite interested stakeholders among those who will have sent an Expression of Interest.

An Hypothesis for a
Management Institutional Framework (2)

- The mission of the Technical Board will include the definition of the technical reference of the specific work-packages contained in each call. It also will make the selection of the best applicant for each work-package of the call;
- Each selected applicant that will be appointed to realize almost a work-package of the call will enter the Management Board. It will count on a share that will be proportional to the value of the sustained effort.
- The promoters, in any case, will not hold less than the 40% of the shares of the Management Board.
- The use of the technology developed during the life of the project will be allowed to the Members of the Management Board;
- This safeguard will be limited to the recovery of the costs (in broad sense, including the value of the assets put into the project). After this threshold, the Management Board will grant the largest diffusion of the technological achievements and utilities to Governments, the Scientific Community and the Industry.