# SYSTEMS ANALYSIS OF PLANNING PROCESSES

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## Contents



## Summary

Planning processes are used in a wide range of organizations and a large scope of problems. Here are analyzed national planning procedures, urban and regional planning, and planning inside firms. National planning is justified by many different reasons: market failures and especially externalities, external effects and myopic behavior of agents, non-existence of markets for future goods. It has been implemented either in the form of centralized planning in the former USSR and eastern countries, or in the form of indicative planning in several European countries, and somewhat intermediate solutions

in most developing countries. These procedures and institutions have been developed thoroughly after WWII up to the 1960's and have afterwards decreased continuously. Urban and regional planning is much more widely spread; almost all countries use it, in accordance with national planning processes where they exist. Planning inside firms is used mainly in large firms, and usually is imbedded into very precise procedures being part of the decision process also including: prospective, strategy, and programming

# 1. Introduction

## 1.1 Definitions

Planning processes are used in a wide range of organizations, from the family to the States, going through firms and local authorities. They are also used for various activities, and the same word covers very different meanings. People speak of familial planning or urban planning as well as indicative planning.

In each of these cases the word "planning" covers some similarities, which can be expressed in a synthetic way through the definition given by a dictionary, for instance "a scheme for accomplishing a purpose" (Chambers twentieth century dictionary, 1901). Though they relate to the same idea, the planning procedures are different, they are motivated by different reasons, and their operating principles are not the same in each of the previous cases.

## 1.2. Scope of the following developments

The following developments are limited to economic planning. In this field, the decision procedure includes four steps, linked one to each other:

- prospective
- strategy
- planning
- programming

The first step is prospective. There are several definitions of it and usually prospective is opposed to forecast: forecast is based on the current situation and relies on quantitative relations. It is a mechanical procedure. On the contrary, prospective doesn't refer to the present situation. It takes place directly in the far future. It takes in account all external decisions, which can affect the future. It is an active procedure.

The second step is strategy. The origin of this word is military. It is often opposed to tactic. Tactic is how to set the soldiers before the battle. Strategy is the movements planned for these soldiers, depending on the final objective and the evolution of the enemy.

If we apply this definition to economy, strategy is an assessment of the weakness and strengths and an overall view of actions to manage. Logically, strategy depends on prospective and so, has to be defined after it.

Planning and programming are more close to action: planning defines how to reach the objective. It applies to medium term periods; programming is short term oriented. Both define the actions to set and make sure that everything is coherent.

As it can be acknowledged these four steps go progressively from long to short term, from objectives to means, from qualitative to quantitative, from unsure to sure.. This scheme is not limited to economics, of course. But in this field it can be applied to several levels. The most important ones are the country level, the level of the regions and the level of the firms. The first section will be devoted to planning processes at the country level. The second one will cover local authorities planning - mainly urban and regional planning. The third one will give indications about planning inside firms.

## 2. National Planning

### 2.1 Two Tools to Control Economy

Planning is recognized by the economists as one of the two major means of controlling the economy, the other one being the market. But the relative emphasis put on each of these two tools is different from one country to another. We will examine first the reasons leading to the use of planning, second some examples of planning in several countries from various parts of the world.

### 2.2. Theoretical Aspects

In the past, central planning was assumed by many theoreticians to be able to achieve complete control of the economic system; this stream of thought lead to the economic structure of the Soviet system, first implemented in the USSR, then exported to the eastern European countries and to China and some other Asian countries; but after the collapse of the USSR, a majority of economists consider that planning is essentially a means to alleviate the forthcoming of the market system.

#### 2.2.1. The Conditions for an Efficient Market Control

Market is the system by which the demand and the supply of each good and the price of the exchange are fixed by an auctioneer in such a way that, at that price, demand equals supply.

One of the major results of the microeconomic science is the well-known welfare theorem, which states that, under some assumptions; market organization and competition lead to a collective optimum (it means that it is not possible to improve the situation of anybody of the society without worsening the situation of somebody else in that society).

Adam Smith and Leon Walrus in the past, Kenneth Arrow and Gerard Debreu more recently, have provided the most important contributions to establish, this result. But its validity depends on several assumptions:

- Each economic agent is small *vis-à-vis* the whole market. More precisely, no individual is able to influence the price of the market. This condition excludes

the existence of monopolies, which would restrain their production, put on the market a smaller quantity of the goods than the competition situation would do, and increase their profit through higher price at the expense of the consumers.
- There is no externality. It means that no agent is able to cause damage or a benefit or to influence the satisfaction of another agent out of a market mechanism. Typical situations of externalities are environmental damages, or beneficial effects stemming from communication between people.
- There are markets for future goods, more precisely for each possible future good. These future markets can take two forms: contingent markets (for instance an umbrella during next week if it rains) and usual future markets (corn to be delivered within three months).

### 2.2.2. The Real World

The real world is different from these assumptions:

There are monopolies, either because of collusion between firms or because the industry experiences increasing return to scale, leading to the situation where a single firm operates.

- There are a lot of external effects; the list of them is increasing from year to year.
- There are very few future markets, except perhaps for some commodities, and also very few conditional markets, just the insurance markets.
- Furthermore, very few goods are traded through markets, which operate according to the requirements of the theory. In many modem economies, around 50% of the GDP is worked out through administrations, and auctioneers rarely operate the markets for the other goods. The traded goods are not precisely defined. The traders are not fully informed about the characteristics of the goods.

### 2.2.3. Market Failures and Public Intervention

Public intervention usually copes with these "market failures", as the economists name them. The first two kinds of market failures are often deviated by taxes or regulations or by direct public management. The case for planning arises for the two last kinds, the absence of future markets and the imperfection of existing markets.

The markets for future goods are means to match the opinions of the agents about the possible events (if, for instance, a majority deems that new petrol resources will be discovered in the future, the price of future petrol will be low), and their schemes (if, for instance, chemical firms intend to develop petrol products, the price for future petrol will increase). The market for future petrol, if it exists, will allow the agents to adjust their plans, and perhaps to revise their forecasts, by benefiting from the information provided by the market, thus improving the collective welfare.

### 2.2.4. Planning as a Means to Correct Market Failures

The planning process is a substitute to these non-existing markets. During this planning process, the economic agents discover their schemes and match their views about the future. In fact the process is not led by the agents themselves, but by representatives, for instance representatives of the workers, of the managers and of course of administrations and government. In fact any other solution would be impossible to work out. Markets for future would be too numerous (one for each good and for each possible future), and the transaction costs would be too high. So it is quite natural to group the agents in a small number of clusters, to synthesize the possible futures into a small number of scenarios, and to gather the positions of all the agents through a small number of representatives.

Planning is also useful when market does not work properly or does not exist. This is the case for large decisions such as decisions about large investments, which have consequences in the far future, and also for public decisions for which there is no market.

The planning procedure is also a mean to take the best possible advantage of the positive externalities arising from the diffusion of economic information. Furthermore the planning process allows economic information and forecast to be elaborated on the widest possible basis.

So the planning procedures appear to be a mean to correct the market failures, and to work out at a minimum cost the future markets recommended by the theory.

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## Biographical Sketch

**Emile Quinet** is currently member of the CERAS, a research center of the *école nationale des ponts et chaussées (ENPC)* in Paris (France) and professor of economics in this *école*. He has experience as an academic and civil servant.

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