1. Foreword

Mega infrastructure projects are extremely complex processes having substantial impacts on communities, environment, and budgets (Altshuller and Luberoff, 2003; Frick, 2005). They include hydroelectric facilities, nuclear power plants, large transportation infrastructures (Priemus et al., 2008) and high-profile buildings, quickly reorienting the international imagery of the cities (Olds, 2001) and representing the nodes and the links of networks worldwide (Castells, 2010). Mega transport projects, in particular, are large infrastructures aiming to facilitate mobility and connections on a grand scale (Adams, 2007). Mega transport projects together with the new informative technologies play a key role in the elimination of frictions caused by remoteness (Robins, 1991) as well as in the achievement of the utopian Zero-Friction Society (Hajer, 1999). The European Union with its grand scheme of creating the trans-European transport network (TEN-T) is an ardent supporter of this new politics of space (Ross, 1998). The provision of a new “core network” of ten major implementing transport corridors, proposed by the Commission in 2012 and to be approved by the Parliament in 2013, is the most recent version of this huge program to be completed by 2030. In this program, Italy is interested by four of these ten European Corridors. Three have a north-south direction while the fourth, now called Corridor 3 (or Mediterranean) but better known as the Lisbona-Kiev Corridor V, has a East-west direction. This Corridor is, from different points of view, very controversial and the mega projects that bear on some of its sections (in particular on the western Alps in Piedmont Region, and on

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the eastern Alps in Veneto and Friuli-Venezia Giulia Regions) are particularly contested not only by local communities but also by academics and scholars in transport economics (Ponti, 2003).

Many inadequacies seem to demonstrate, in fact, that planning is lacking many evidence based reasons and this shortcoming appears further emphasised by the main implications of the current severe financial crisis (public cutbacks; necessity to strictly redefine the few priorities that really matter to recovery, growth and so on).

Among the different criticalities that seem to characterise the planning of large infrastructures, we will focus mainly on the lack of coordination between the newly planned and the already existing infrastructures. The substantial “ignorance” of the efficiency of existing railways, with the exaggerated emphasis given to the new High speed/High capacity railways of Corridor V, seems to depict an impressive case of strategic underestimation of the existing context and overestimation of the miraculous effects of the new provisions. Is this a case of misrepresentation or misunderstanding or both? In the first case, we could support the hypothesis that fallacies and criticalities of current mega projects derive from the responsibilities of public bodies that have consciously ignored the potentialities of the existing infrastructures in the planning of European corridors. In the second case, instead, we could support the hypothesis that those fallacies and criticalities derive from responsibilities of the scientific community involved during the planning process. In the third case, we could support the hypothesis that an interplay between political and economic interests has affected negatively the development of current mega projects, beyond the emphasis given to the new railways and the scientific knowledge directly involved in its planning.

In order to explore the fallacies and criticalities of current mega projects, we will concentrate on the planning and programming of European corridors in Italy, both from a general perspective, and also focussing on few regions.

In the following section, we analyse issues at the national level through the national transport and logistics plans; then we deepen our analysis at the regional scale through the regional transport and logistics plans of the Friuli Venezia Giulia Region.
Fig. 1 - Map of the proposed 10 core European corridors (source: CPRM, 2012).
2. Reasons for the poor performance of transport infrastructure mega projects

Many large infrastructure projects have demonstrated, all over the world, to have poor performance records in terms of economic, environmental and public support (Morris and Hough, 1987; The World Bank, 1994), failing in their attempts to achieve urban “progress” (Dimitriou, 2009). Flyvbjerg denominates this phenomenon as the “Mega-projects Paradox” (2003), indicating how projects that were initially promoted as effective vehicles to economic development owing to over-optimistic forecasts, turn out to be possible obstacles to such growth. In fact, underestimating costs and overestimating benefits leads to an inefficient use of resources since non-viable projects may be implemented at the expense of projects, which would have been able to guarantee higher returns. Recently, different authors have provided explanations of inaccuracy in forecasts.

These inaccuracies could be classified in three main categories. These are: technical mistakes (i), absence of an appropriate problem analysis (ii) and wilful distortion of data (iii). Technical explanations are most common in the literature and explain inaccuracy in terms of honest mistakes, inherent problems in predicting the future, unreliable or outdated data and the use of inappropriate forecasting models (Vanston and Vanston, 2004). In his seminal book, Hall (1980) states, for example, that many of so-called “Great Planning Disasters” seem to have been initiated on the basis of forecasts that were later found inadequate and misleading. Forecasts are, in effect, the result of many complex algorithms and uncertain inputs and cannot be verified until the project is actually delivered (Allport, 2011). Technical errors may be reduced by developing better forecasting models, larger databases, and more experienced forecasters. However, research (Flyvbjerg et al., 2002 and 2005) confirms that, notwithstanding the commitment of money and efforts in improving the weaknesses of forecasts modeling costs, demands, and other impacts of major plans and projects, these forecasts have remained constantly and remarkably inaccurate. Accordingly, Flyvbjerg (2003, 2005 and 2008) claims that something other than poor data and models is at the root of costs overruns and benefit shortfalls of major projects. The inadequacy of current approaches to the analysis-planning of mega-projects constitutes another possible reason of their poor performance and has been extensively documented in the international literature.

As above mentioned, large infrastructure projects are complex by nature and entail problems of uncertainty and risk on a global scale. According to several authors (Flyvbjerg, 2003; Flyvbjerg and Cowi, 2004; Batty, 2007; Bertolini and Salet, 2008; Priemus, 2010), this
complexity dwells partly in the complicatedness of the infrastructure itself and partly in the highly stochastic nature of the “project development cycle”. Furthermore, the extremely turbulent external environment into which a given mega-project is placed, involving a multitude of variables and actors, combined with its extremely long lifespan, makes financial, political, social and technical changes likely to happen. Consequently, the preparation of large infrastructure projects would require an accurate problem analysis (Priemus et al., 2008). However often the project-development process appears to be fragmented (Allport, 2011) and fails to adequately take into account the systemic ramifications of complex interactions of uncertainties (Dimitriou et al., 2008). Moreover, while for small projects Cost-Benefit Analysis may be the most effective means of decision-making, for mega-projects there is a need for more sophisticated analysis incorporating environmental effects and wider economic effects (Vickerman, 2008). In so doing, project outcomes are expected to be more controllable and more in accordance with pre-determined plans, schedules and programmes than it is really possible. This persuasion is strengthened by a sort of intrinsic optimism bias that Lovallo and Kahneman (1993, 2003) call “illusion of control”. This illusion induces individuals not to behave as “rational men” but conversely to exhibit an over-optimistic judgment about the future events without considering adequately the possible consequences of a downside scenario. Flyvbjerg, by comparison, asserts that uncertainty in estimating viability is related above all to strategic misrepresentation. According to his explanation, inaccurate forecasts are linked to power and interests. It happens when, forecasting the outcomes of projects, forecasters and planners deliberately and strategically overestimate benefits and underestimate costs in order to gain political acceptance for their projects. Especially when a given project is in competition with others for scarce resources, project promoters tend to emphasise scenarios of success and minimise those ones for failure. In particular, two studies about strategic misrepresentation undertaken in UK (Flyvbjerg and Cowi, 2004) and US (Wachs 1990) clearly demonstrate that consultants appear to focus on justifying projects rather than critically scrutinising them.

3. The national transport and logistics planning in Italy

Up to now, the Italian infrastructure system has not been able to adapt to the drastic changes in transportation patterns, which have been imposed by globalisation (Censis, 2009; Confetra, A.T. Kearney, 2011). The main problem is the absence of a clear and coherent development strategy. The different planning instruments which have alternated each other, in the last ten
years, have not assured the necessary continuity in the process of modernisation of the national infrastructure network. Conflicting policies have implied continuous changes in the list of priority projects with the result of failing the objectives and wasting public resources (Giannino, 2010). The Legge Obiettivo (law n. 443/2001) has not achieved its objective to guarantee a rapid construction of the most strategic projects. Furthermore, the number of these projects has increased from 129 in 2001 to 189 in 2011 so that, at the present time, only around 20 per cent of them have been completed (Legambiente, 2011). The seven “Logistic Platforms”, established by the 2006 Logistic National Plan (Fig.2) in order to allow Italy to play a more relevant role in the global trade, have turned out to be excessively generic. In fact, there has not been any precise functional characterisation of these logistic macro-areas. Moreover, in order to support these not well-defined platforms, there have been identified 25 logistic nodes, including airports, seaports and freight villages, which, nevertheless, seem to be an exorbitant number, compared with the current transportation tendency of reducing the number of necessary links and break-bulk handicaps.
The Strategic National Framework 2007-2013, by comparison, has attempted to integrate the national transport policies with the European scheme of the TEN-T and with the European structural funds programmed for the period 2007-2013. In this perspective, 16 “Strategic Territorial Platforms” have been defined so as to mediate the interest of both the local communities and the European Commission (Fig.3). However, these “Strategic Territorial Platforms” appear to have been developed even on the corridors which have less secure prospects for their realisation (Fabbro and Mesollella, 2010). In effect, it is possible to see that the majority of them have an East-west orientation, along the “problematic” routes of Corridor V and Corridor VIII. The former is characterised by deep uncertainty about its effective completion due to consensus deficit and lack of financial support. The latter is a corridor not yet recognised as a priority project by the European Union. Both of them have been judged, inexplicably, more important than the North-south axes affecting Italy (as Corridor 1, Corridor 24 and the Baltic-Adriatic Corridor), which have larger possibilities to be completed within a shorter term.
Finally, even the new 2010 Logistic National Plan has not responded to the new transport demands in a productive way and has not taken any concrete initiative for overcoming the just-appeared economic crisis effects. Having abandoned the “Strategic Territorial Platforms” model, after only three years of its adoption, in favor of the early “Logistic Platforms” vision, it seems to be only a partially reworking of the previous Logistic National Plan.

As a consequence, during these years, Italy and particularly its ports have been marginalised by the international trade, despite its favorable position in the middle of the Mediterranean Sea (Beretta et al., 2009).

Fig. 3 - The Strategic Territorial Platforms of the Strategic National Framework (source: Mit, 2007).
4. The regional transport and logistics planning in the Friuli Venezia Giulia Region

Friuli Venezia Giulia (FVG) is a region situated in the extreme North-East of Italy, between the Adriatic Sea and the Eastern Alps. Westwardly it touches the Italian region of Veneto, northwardly the land of Carinthia in Southern Austria and eastwardly the Republic of Slovenia. In geographical terms, the potentialities of this territory are evident. In fact, the region is interested by two important European railway axes:

- an East-West axe, the Mediterranean Corridor, which links Spain to Ukraine in the newest TEN-T programming, originating from the admixture of Corridor V and few TEN-T priority projects;
- a Nord-South axe, the Baltic-Adriatic Corridor, which links Wien to the North Adriatic ports, as extension of the original TEN-T project “Gdansk-Wien”.

The FVG Region is directly connected to the Southern Mediterranean Sea and the Suez Canal, through the Adriatic Sea. This, in turn, means great possibilities to tap into a consistent part of freight flows between Far East countries (particularly China and India) and the most industrialised and developed European regions. These are Central and Eastern European regions located along the Baltic-Adriatic axe, such as Bavaria in Germany, Austria, Czech Republic, Slovakia, Hungary, etc. Presently, these countries are generating an annual traffic of 9 million TEU which is estimated to rise up to 13 million in 2015 (UniCredit and APM Terminal, 2010).

According to these lastest estimates, flows are rising again after the recent downturn. Thus, reassuring maritime trade trends and a favourable location make of FVG seaports the focus of ambitious development plans. At the moment Trieste, the major port in the region) and Monfalcone, which is only 30 km far from Trieste, aim to increase drastically the handling capacity of containers, which in 2009 was less than 300,000 TEU. Recent forecasts released by UniCredit Logistics estimate a container throughput of up to 5,5 million TEU per year by 2020, once completed all of the interventions in the North Adriatic ports (UniCredit and APM Terminal, 2010). This figure is currently, more or less, equivalent to half the traffic handled by the port of Rotterdam.

To achieve this, it is necessary to double the existing container terminal area in Trieste with the construction of a second one and to build a totally new container terminal and logistics center in Monfalcone, along with an extensive dredging to increase the draft. The port development projects are, public in Trieste, while private in Monfalcone.
However, it is well known that, among the strategic assets which allow seaports to really play a role as gateways, there should be the existence of railway links with inland territories. Therefore, the major problem concerns the forwarding of these expected large amounts of containers from North Adriatic ports toward most productive markets, not forgetting that the seaports of Venice in the Veneto Region and Koper in Slovenia are competing with Trieste and Monfalcone to capture flows coming from the Far East.

Until this moment, central and eastern European countries have been served almost exclusively by North European ports in reason of more competitive railway services. Nonetheless, they could be highly interested in redirecting their traffics to the nearest North Adriatic ports, whether there would be an improvement of efficiency. In other words, only if North Adriatic ports will be capable of moving larger quantity of goods by rail and more quickly, there would be the opportunity to counteract the maritime monopoly of North
European ports. Therefore, optimisation of the existing regional road and railway networks is indispensable as the completion of the Baltic-Adriatic Corridor. This corridor, in particular, has recently been recognised by the European Commission as eligible to enter in the new TEN-T program (core network) as the first one of ten listed corridors. Nowadays, different development programs are under way along this corridor, as in Austria, through the realisation of some important tunnels, as well as in other countries, such as Italy. Here, the “Pontebbana” railway, which represents the southern segment of the corridor and links North-Eastern Italy to Austria, through the Alpine pass of Tarvisio (Fig.4), has been doubled for the part pertaining to the FVG territory in 2000. Hence, this railway with a double-track configuration has gained the necessary carrying capacity to support an eventual rise of freight flows.

However, national and regional strategies, developed in recent years, seem to move in opposite directions. Even though, the FVG region has been included in the cross-border part of the “Logistic Platform of the Nord-East” in the 2006 National Logistic Plan (Fig.5), this platform, which includes also Veneto and Trentino Alto Adige regions, appears to be overly broad and vague. Moreover, expressly centred on the node of Verona, it penalises the infrastructure links and nodes of the FVG region.

Fig. 5 - The “Logistic Platform of the Nord-East” (source: Mit, 2006).
The Strategic National Framework 2007-2013, instead, has placed the FVG Region within the “Strategic Territorial Platform–Corridor V-East” which has been organised around the uncertain Corridor V, rather than the more concrete (even if not still formally recognised within the TEN-T) Baltic-Adriatic Corridor (Fig.5).

Especially the section of Corridor V starting from Venice and prosecuting towards Trieste, Slovenia and the other eastern regions, is a sort of “ectoplasm”, difficult to identify on the maps without a definite project or a preliminary complete consensus, by the interested territories, on the possible route, and without any financial plan behind it. Moreover, several countries traversed by Corridor V seem to have adopted other priorities in their infrastructure policies. In the new Plan of the Ministry of Transport infrastructure of the Republic of Slovenia, for instance, there is not any reference to the cross-border connections between Divača and Trieste and between the ports of Koper and Trieste.
Thus, the choice to organise the platform around the East-west axe, instead of the North-south one, is difficult to understand. The only possible justification could be that, at the time of its definition and till only few years ago, the eastern part of the Corridor V axis was considered a project which could be realised in no more than ten years. In fact, the Venice-Budapest section, even in technical and very informed documents, was supposed to start in 2003-2007 and be finished by 2015 (Ten Stac, 2003). According to these very optimistic provisions, informing also important official documents of the EU as the Ten-T Priority Projects (Eu Decision 884/2004). Even the FVG Region (Fig. 7) introduced Corridor V as the first infrastructural provision of the regional spatial plan itself (PTR, 2007). Even though, this plan (PTR) suffered political shifts in government, being firstly elaborated and adopted during a centre-left government and then withdrawn in 2009 by a new regional government majority of centre-right, neither coalition ever changed the fundamental provision. In fact, the most recent Regional Plan of Transport, Infrastructure and Logistics Mobility (PRITMML, 2011), approved by the Region in 2011 (with the new government majority of center right), persists in emphasising the East-west railway axis as an essential territorial provision. It is evident that the “optimistic bias” is bipartisan and definitely hard to die.
As a result of these questionable strategies, some existing national infrastructures located in the FVG region appear neglected or largely underused, especially those along the Baltic-Adriatic axe. In particular:
- the “Interporto Alpe Adria” in Cervignano del Friuli, and;
- the already mentioned “Pontebbana” railway.

The “Interporto Alpe Adria” is a freight village of national importance conforming to European standards in terms of size and length of operating railway tracks. It is situated in the centre of the region, exactly at the intersection between the routes of Corridor V and the Baltic-Adriatic Corridor (Fig. 4), having the possibility to be connected to the railway network in every direction. This infrastructure was conceived at the end of the 1980s to play a strategic role for the regional trade, but owing to the new economic parameters of logistics, it finds difficulties in effectively interacting within the regional dynamics. On one hand, it appears overly close to the Adriatic ports to be a useful “off-dock” terminal to cooperate with them; on the other hand, its location excessively external to the main cities and the absence of adequate highway links impede its role as distribution center for the city systems.

The “Pontebbana” railway, by comparison, has been ignored by national programming from 2004 onwards (the year of establishment of the 30 TEN-T priority projects) and is currently used for less than one third of its daily potential (50 trains per day instead of 150).

It is evident that both of these infrastructures, as well as other underused inland terminals, might play a significant role in increasing the competitiveness of the North Adriatic port system and establishing a more effective connection between it and the central and eastern European countries, through the Baltic-Adriatic Corridor, to realise the so-called North Adriatic Gateway (Dean and Fabbro, 2011).

In the “post crisis” perspective, the reconnection of the whole North-East of Italy to the European network of transport and logistics seems to be more easily achievable through the Baltic-Adriatic Corridor rather than though Corridor V. It is our opinion that only the completion of a vertical axis may give the concrete opportunity for the North Adriatic port system to become a real European gateway with the consequent generation of new added value and new employment opportunities in the local territories, such as the creation of new jobs both in the short term, during the construction phase, and in the medium and long term, as a result of the increase in the logistic activities in the Region (Region FVG, 2010; Dean, 2010; Dean and Fabbro, 2011).
Therefore, there is need of a radical change in both the regional and national transport policies. The new economic and financial context requires a careful reconsideration of the original definition of the European corridors and related priorities. Nowadays, North-south corridors, such as Corridor 24 (Rotterdam-Genoa), Corridor 1 (Berlin-Palermo) and also the Baltic-Adriatic Corridor, bringing Italy into closer contact with the richer and more dynamic areas of the so-called "Blue Banana" and "Orange Melon", are those which seem to have more possibilities to generate economic growth for the Italian territories in the short to medium term (within ten years).

In this perspective, the implementation of the Mediterranean Corridor, should not disappear from the scene, but should become logically and hierarchically subordinate to the vertical corridors. Thus, the Italian section from Milan to Venice - apparently achievable in a reasonable timeframe - could be mainly devoted to the development of a multi-regional and trans-metropolitan connection, along the Po Valley, between the two European gateway cities. Development of Western and Eastern cross-border sections should remain strategically important, but placed necessarily in a longer-term scenario.

5. Conclusions. Misrepresentations, misunderstandings or both?

Each plan is a technical product, but expresses, first and foremost a political-programmatic decision. What is then the cause of the macroscopic mistake of under-represent, in plans, the evidence of things that exist and, at the same time, to emphasise the feasibility of things that do not exist? What is this? Wilful misrepresentations or perspective errors legitimised by methodologies and techniques?

Certainly, the introduction of a corridor in the European maps, although not justified by the evidence, as in the case of Corridor V, provides the prediction with a visionary force that threatens to blind national policies and induces the temptation to exaggerate opportunities and potentialities. However, it is also true that the European vision has suffered a large shifts over eight years (from 2004 to 2012) since:

- given the current financial period, there has been a need to refocus European spending. Thus, TEN-T policy moves away from the definition of separate priority projects toward measures that help implement the development of a core transport network made of ten corridors;
- among these core network corridors, a new axe is introduced that was not previously planned, which is the southward completion of the Baltic-Adriatic Corridor;

- the Baltic-Adriatic Corridor gains high priority being ranked first in the new formulation of European corridors.

The drastic reduction of the European transport plan, is accompanied by a less clear restatement of priorities, including, among other things, a first-place corridor, whose southern completion had been completely forgotten in previous plans. In this case, we can state that the fault is upstream, in a European vision too broad (in the number of corridors included), ambitious and optimistic (in time and resource requirements), but also not keen to enhance existing infrastructures (and, therefore, the territories concerned). This is certainly a fact of wilful misrepresentation.

Furthermore, in Italy national plans have unduly emphasised the feasibility of Corridor V by inserting it not only in an optimistic "future vision" of the Italian territory (MIT, 2007), but also in the "logistics platforms" of the Logistic National Plans (2006 and 2010) as it were a work of easy and immediate feasibility. In this case, we can state that planners, both urban and transport planners, have been blinded by the grandeur of the project without realising the strong and critical weaknesses characterising it. One fact in particular should not have escaped their attention: a corridor that crosses diverse areas, ranging from the metropolitan systems of Turin and Milan to the widespread networks of small and medium-sized cities in the North-east Italy, cannot be homogeneously and uniformly designed to a single model of high-speed rail standards. It took not only the financial crisis, but also the conflicts in Susa Valley against high speed rail to show, even to experts, this self-evident truth (indeed, some transport economists were sceptical since years on the strategic utility of high-speed rail over large sections of Corridor V).

Is it misunderstanding or misrepresentation in this case? Certainly the grandeur of the vision blinds the ability of technicians to intervene critically on the overall work. Individual transport economists, urban planners or railway engineers did not fail to plead their case. However, these critiques regarded mostly single regional or sub-regional sections of the corridor, while the overall work eluded the critical capacity of the sector expert. Furthermore, it must be noted that the macro-political vision, made it extremely difficult and ambiguous a critical appraisal that, on such a large scale, ended inevitably intertwined with political visions or actually motivated by reasons of political antagonism.
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**Images references**

Fig. 1 - Map of the proposed 10 core European corridors


Fig. 2: the seven “Logistic Platforms” located by the Logistic National Plan

Fig. 3 - The Strategic Territorial Platforms of the Strategic National Framework


Fig. 4 - the North Adriatic ports system


Fig. 5 - the Logistic Platform of the Nord-East area of Italy


Fig. 6 - the “Strategic Territorial Platforms Corridor V-East”

Fig. 7 – The provision of the Corridor V (the dashed purple band) in the Piano Territoriale Regionale of the Region FVG (2007)