

# Improving Construction Industry's Contributions to Society: A View on Culture's Role

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## Abstract

Now that the global economic crisis has had an enormous effect on construction industry in for example the European construction market, one can see still some signs of partial recovery. But on average there is also still a strong need for the -economic- recovery of the industry. However, to play again a significant role in society as being one of 'the' drivers to build new or restructure existing facilities, there emerges quite a strong challenge for construction industry to reposition themselves again properly: For example, during the recent past, several countries had scandals within their construction industry as being influenced by collusion, bad-quality, high-pricing, non-communication etc. In short: a 'disaster' for clients...

Nevertheless, since the fact that during crisis-times several governments use the anti-cyclic approach of increasing their investments in construction projects (for example in infrastructure-works, because it serves the society three times, that is: Construction-prices are lowered, it helps to reduce unemployment, and it brings new/improved infrastructure), these increased activity at one hand is accompanied by a production decrease on the other hand. So how to balance the construction industry's interests properly? And how to use the momentum in a possible change -or even to make a transition- towards a more client-friendly culture? This paper describes and analyses literature related to the above themes, being positioned as a view on culture's role in the nowadays improvement-activities for construction-industry's contributions to society. It concludes that if the conclusion from analysed literature is right that transition activities in general focus too much on technology-aspects alone, instead of the at least equally important behavioural aspects, this might indeed result into a stronger need for research into business-cultures in construction-industry (and the ways on how to understand and to improve them) to become a positive effect for construction-industry and it's contributions to society.

**Keywords: Anti-cyclic, Business-culture, Construction, Social-media, Transition.**

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## **1. Introduction**

Since circa 2008, several of the different world-economies are suffering within a deep crisis, although there are differences. Looking for example to the Euro-zone, the crisis is obvious, which is also the case for the USA. Parallel to this, the so called 'BRIC-countries' (that is Brasil, Russia, India and China) still show considerable growth of their national economies. Although strongly focused on exports of products (for example China and Brasil), investments (for example China and Russia) and energy-resources (for example Russia) and technologies (for example India), they also have a strong import of products; but also and especially they attract foreign investments etc., for example for the growth of their national markets. Such developments one can see increasingly in the field of for example public infrastructure: Their increased need for improving such facilities does not always has the same 'speed' with the growth of their national production; that is, despite the strong growth of production-output/exports, the inflow of capital does not 'automatically' lead to public and/or private increase of infrastructure-investments. This discrepancy seems to be solved increasingly by the tendering of (mainly) infrastructure-ppp's (public private partnerships) on the international market. Not only by those BRIC-countries themselves [Chopra et al, 1995], or by competing companies from those BRIC-countries as participants for such -international- tenders [Goodman, 2004; Oster, 2007], but also by other -smaller- countries [Aruba, 2011]. In fact, examples as the BRIC-countries try to profit now from their positive image and developments, thus being able to attract sufficient -foreign- capital; whereas for other -often smaller- countries, the attraction of foreign capital often is their 'only left hope to survive' and/or modernize their (infrastructure)facilities...

## **2. Economy and construction industry: An anti-cyclic approach**

Regarding the described characteristic increase in the field of internationally tendered infrastructure-ppp's, this leads to a point of view that the construction industry as a whole played and still plays a strong role as one the 'drivers' for recovering or growing an economy. And this, despite several earlier 'critical' situations, not just related to economic tide, but for example merely related to bribery, collusion, etc. [Egan, 1998; Vos et al, 2002]. Such negative sentiments and habits, existing until the late 1990's and early 2000's, have hit the (international) construction industry quite severe, thus damaging the image and attractiveness of the industry very bad. Nevertheless, gradually the construction industry had gained positive attention again during recent years since ca. 2003. However, although the average positive recovery, the construction industry still was not recovered enough to overcome the big economic crisis within the industry's (home)countries, starting in circa 2008. That economic crisis has started a strong downturn into the construction market in especially the USA and Euro-zone.

**Remark 1:**

*From a totally different viewpoint one can imagine that stimulating construction industry, because of the need for rebuilding post-war countries, is a very special situation; such situation exists for example in the nowadays Iraq situation, in which the national government tries to attract the necessary foreign capital and construction-capacity by using the growing income from their recovered oil- and gasfields, trying to implement kind of concession-models (that is market-investments, gradually paid back by the income from the projects; etc.). However, although the enormous need for projects, the international community still considers the actual (political) situation still quite risky to be 'simply' attractive for large-scale direct investments; a governmental 'guide' towards succesful business is obviously needed within such environments [Republic of Iraq, 2012]. Therefore, improving construction industry's role in the improving of a society cannot be just a 'sectoral' approach: It also needs a well balanced and organised (political) society, in which it can bring added value by delivering good quality projects, with the help of well-equipped and trained employees. But obviously, actual situations in construction industry within its societal environment often leads to just using low-cost labour, often leading to unsafe construction-sites with low-quality projects as one of the negative results.*

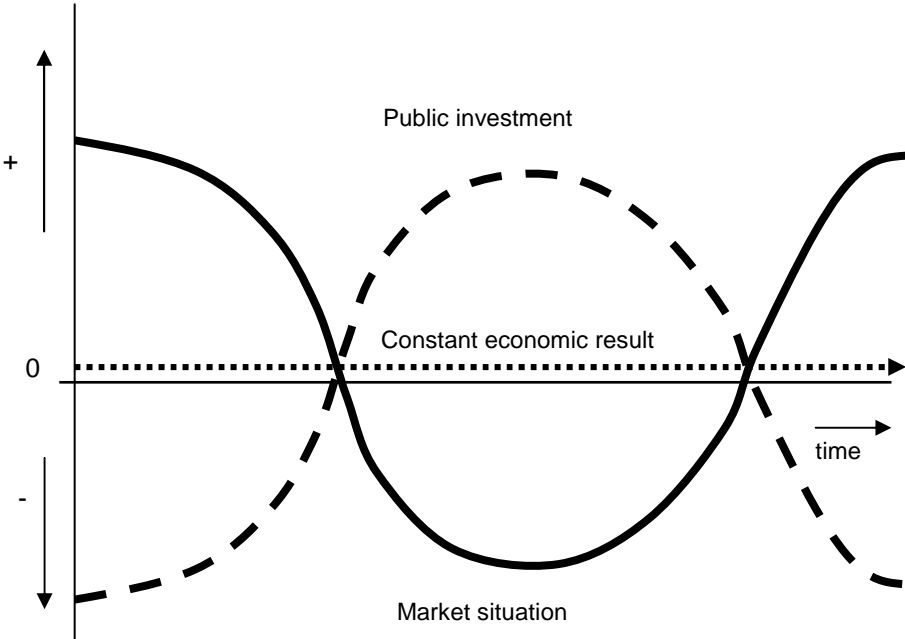
**Remark 2:**

*Although after the years of scandals in construction industry, for example as shown above the previous part by the British and Dutch references, one can still see that specific complex projects are suffering the risk of 'typical' situations, for example characterized by untransparant transactions etc. Such complex -and costly- projects often occur within the (public) infrastructure-world, where several stakeholders are often 'dancing' around the project's investment-funds, trying to gain profit by every possibility, thus often damaging society's interests seriously [Soetenhorst, 2011].*

Despite the above mentioned 'specific' situations within construction industry, having a positive as well as a negative impact on society, governmental bodies in general still see the positive effects of investments in construction industry projects as creating a strong and positive spin-off to other parts of the economy (for example to supplier-industries, logistics-industries, etc.). In this sense, the construction industry indeed is part of a strong network-organisation, having its relationships with a lot of different companies/stakeholders, serving all one goal: delivering the project for their 'best' price. In fact such networks do collaborate within a kind of 'mesh', influencing themselves vice-versa and being able (or should being able, if focusing on an innovative business-approach...) to adapt quite easily towards changing customer-needs and market-situations [Mulholland & Earle, 2008]. Nevertheless, without restrictions/rules and/or (loose) coupling between the several parties within such networks, innovation might not become that succesful, as Hofman described for architectural and supplier-segments of the construction industry [Hofman, 2010]. Therefore, the underpinning of the importance of regulations for construction industry might not only be needed to create and maintain a fair and transparent market, but might also improve the innovative climate of the industry.

However, such considerations do imply a necessary active push and/or pull role for governments: They should actively be supporting the industry, for example by using an anti-cyclic approach; not only because the industry is to a very large extent exposed to times of economic crises, but also because that an investment of any Euro or Dollar or whatsoever in the construction industry has a strong 'network' effect on the several (loosely) coupled parties within the industry. Another reason for governments' role in an anti-cyclic approach might be the need for long-term investments (for example the total costs per period), thus also creating better conditions for private investors to join in this by adding their own (for example shorter-term) investments (for example the total direct investment) in for example housing-projects, as Tempelmans Plat described [Tempelmans Plat, 1984].

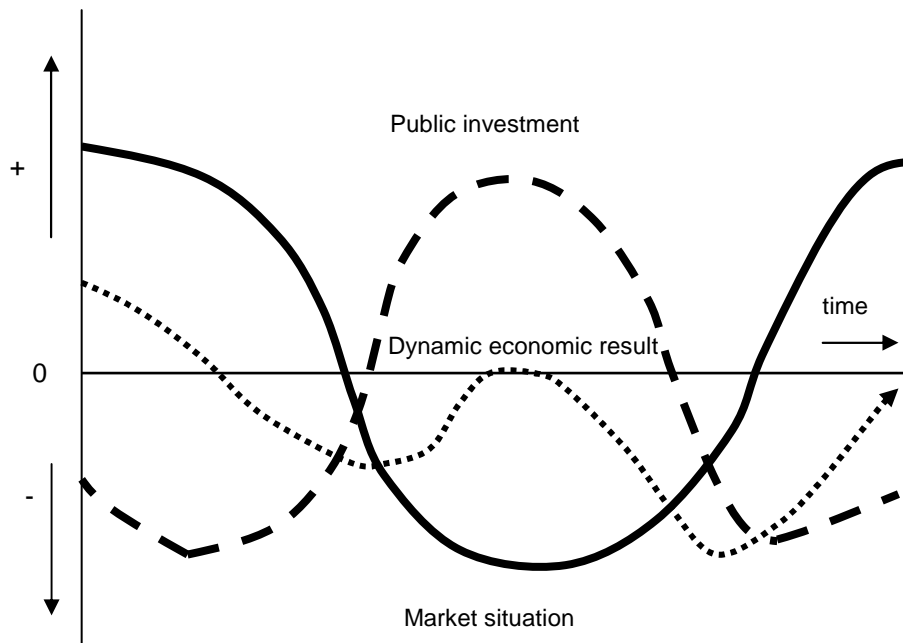
By taking the governmental lead for such (public) investments, which can be in a direct way by for example investments in project(parts), or in an indirect way by for example incentives via tax-regulations, the individual (private) investor will be better able to act on the (project)market. See also figure 1, in which the situation is represented that a government is completely compensating the economic decline and growth on any moment in the cycle, thus creating a totally anti-cyclic approach with a steady economic result during the cycle:



**Figure 1: A totally anti-cyclic approach, by government's compensation for economic decline and growth, on every moment in the cycle.**

And although this situation might sometimes be the case, in practice it is still a quite difficult one, as it indicates a totally regulated economy. And parallel to such 'ideal' characteristics, in practice one can also signalize that the foreseen effects of such regulations do not emerge

immediately at the wished moment, but often occur within a timeframe after implementing the compensation-measurements. Considering also this, generally spoken, the intervention and its effects by governments in compensating economic decline and growth often occurs in more 'delayed' ways, and not on every moment in the the cycle. This thus leads to the fact that there is a dynamic difference in economic results during the cycle. See also figure 2:



**Figure 2: A 'delayed' anti-cyclic approach, by government's compensation for economic decline and growth, not on every moment in the cycle.**

Nevertheless, despite the way how governmental support is organized within construction industry, be it directly by for example ppp-projects or indirectly by for example special tax-regulations, any inflow of capital into the construction industry might help to attract also private investments again or to prevent private investments of being withdrawn from the industry. So from that viewpoint, a governmental policy according an anti-cyclic approach prevents the construction-industry for being 'drowned' during crises-times, and prevents it also for being 'over-heated' (with the often parallel growing untransparency then) during properous times. Nevertheless, there are still discussions ongoing in society about wether it is useful or not to use governmental stimulation-programmes, because the 'direct' effects on society still cannot be measured properly; or at least they do have a more 'delayed' effect.

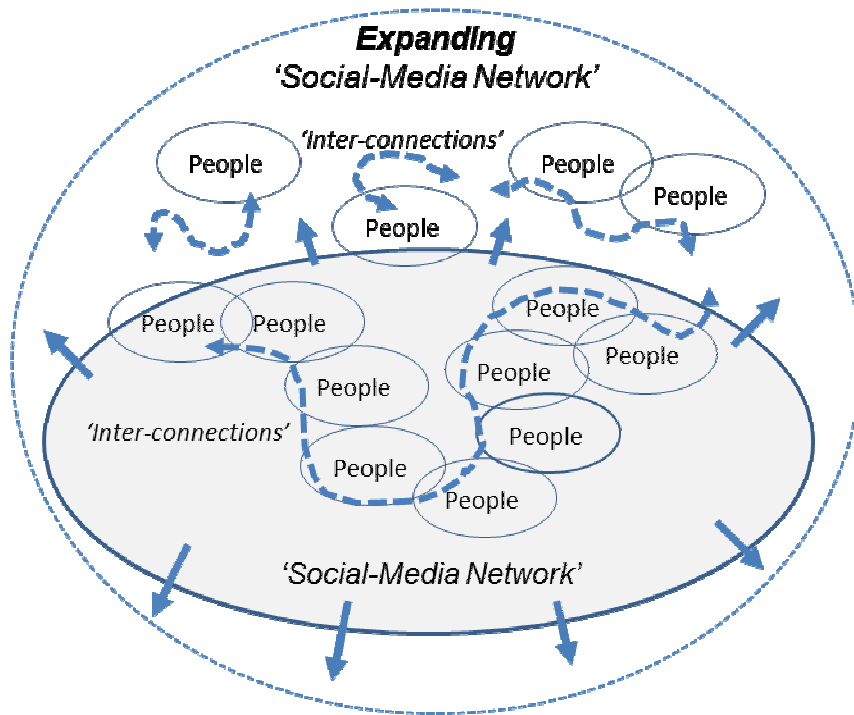
However, in relationship with such supportive compensating approaches, a government can connect their foreseen policy also with restrictions: For example, governments can oblige then construction industry to improve their practices (for example take care of the client, improving transparency, non-collusive behaviour, etc.). In other words, such policy might be

an extra 'driver' to improve construction-industry's business-cultures towards improved functioning and competition-mechanisms. And this is obviously not a unique situation in business, as such type of governmental compensating policy is obviously also being used for other industries, resulting into a kind of 'sector-regulations'; for example in compensating measurements regarding (global) competition issues between European and American aircraft industries, as described by Newhouse [Newhouse, 2007].

### **3. Opportunities for changing culture in construction industry**

When analysing effects of governmental compensating policies, for example on the change of business-culture within construction industry, one needs to consider the structure of this industry more into detail. This structure is in fact a large network of parties involved; be it as shareholders and/or as direct or indirect stakeholders. When considering more into detail the effect of the network-structure of construction industry, as 'the' supplier of (infrastructure) projects to society, the nowadays influence of such networking capacities is tremendously; think for example at influencing power, now generated by clients via social media: A complaining client can now easily make or brake a company by the use of the webbased tools such as social media.

However, this increased use of such tools has also introduced a strong risk of abusing the same tools. For example how to prevent damage in the first moments if someone spreads false information about a contractor? Especially if the spreading is done by someone with a large (and thus often strong influencing) contactnetwork? Then it will take serious time and effort (and money; think at for example claims...) to solve the negative situation. In their book on business-cultures in international construction industry, Tjihuis & Fellows have described these social media networking activities as a serious tool and development, influencing strongly the nowadays and future construction industry. See also figure 3 [Tjihuis & Fellows, 2011]:



**Figure 3: Schematic representation of social-media networks as a tool for 'inter-connecting' people, thus stimulating influencing opinions and/or harmonizing human behavior of (groups of) people [Tijhuis & Fellows, 2011].**

Looking to this social-media effect, it leads more or less towards a more transparent society, where every fact and/or rumour turns itself into a 'viral'spreading over a growing number of people or 'followers', thus being able to inform people very fast and against very low cost; but it also carries the risk in itself, that it also easily turns fiction into (virtual) 'reality'... Therefore this effect is not only a positive one, but has also a negative effect, regarding its inherent risk for harming personal and/or corporate reputations, etc.

Nevertheless, this negative effect can also be turned into a positive effect, because it prevents certain groups of people/companies of behaving unprofessional. For example, if a contractor does not take his client's wishes and demands seriously, and refuses to repair his failures within the delivered project, the client could go then to court and/or into arbitration; of course these legal instruments are still available and (still often) effective, but still often take a lot of procedure-time and -costs. Alternatively, the use of the social media is then a very cheap and effective alternative for the same situation: For example, if the client writes his or her complaints about this contractor on the social-network (web), it will often immediately have its impact on the contractor's reputation, thus forcing him in practice to take serious actions (for repairing the project; and thus also for repairing his reputation...). Of course this all has to do with the use and/or abuse of such social networking possibilities, but, rather than only put a lot of effort (and money...) in claiming for abusing one's name and reputation, somehow also a -parallel- positive action regarding a client's (dis)satisfaction should at least also be delivered by the contractor in such cases. However, of course it

should not result into a kind of 'web-terror' etc., so keeping alert about what is discussed on weblogs and -fora etc. needs to be taken seriously nowadays by every party in the market.

Nevertheless, need for improvement and governmental support of nowadays construction-industry during the actual crisis-situation, combined with the rise of the social media, and reflected against the generally spoken 'quite negative' image of construction, can indeed help to make the construction industry a more open sector, driven by professionals and within a positive professional business-culture. It even can be a kind of pre-requisite for governments to oblige the industry to behave accordingly, before/during/after starting to help with direct and/or indirect (anti-cyclic) public support measurements. From that viewpoint, the momentum during crisis-times might be quite 'perfect' for changing the business-culture.

Nevertheless, altogether it is just merely about being honest, plus being able and willing to listen to the clients, thus focusing on delivering a (still profitable) added value, according client's wishes and demands... But staying profitable will also need a client's recognition of the construction industry's 'new' performance then, leading again to a fair pricing-level. In that way, creating such transitions will not be a one-way approach, but indeed still a two-way vice-versa approach.

#### **4. Discussion**

Altogether, the above described developments according analysed (anti-cyclic) governmental support and the rise of the social media do lead to a more transparent situation within the market; not only for construction industry, but also for other business-to-business (B2B) or business-to-consumer (B2C) activities. For construction-industry, this potential to unlock the possibilities for creating a certain degree of transparency, should be able to lead to removing the old but often still heard non-professional 'image' and/or even illegal 'practices' within the industry; and not only practiced by private parties, but also by public parties. See for example the case of the collapse of the well-know 'Ronan Point building' on 16<sup>th</sup> of May 1968 in the United Kingdom: Several forensic analyses afterwards pointed out that the local building regulations had been neglected by the private parties to a large extend [Griffiths, Pugsley & Saunders, 1968], whereas the supervision on-site was not professional enough [Feld & Carper, 1997].

However, as Delatte also analyses, the accompanying ethical aspects of such collapses are even more important, because in that case several important parts of the information were hidden for the public; not co-incidentally, but merely because at that time there were about six other realized buildings, being built with the same so called 'Larsen & Nielsen' prefabrication system, '...and there was not enough money to strengthen them' [Delatte, 2009].



So when using the transparency-theme as a 'new' driver for changing business-culture and to improve the construction industry's image, it may lead to the following needs, defined for (a) *construction professionals*, (b) *governments* and (c) *clients*:

*(a) To stimulate professional transparent behaviour of people working within the construction industry, this 'new' business-culture needs to be on strategic agendas on board levels, and from there on branch-level;but it cannot survive without a recognition by clients and public regulations;*

And parallel to that:

*(b) Governments do need to behave also accordingly, with a willingness to publish results of (internal) investigations, leading to an honest set of regulations and measurements, thus improving a fair competition in the market;*

And last but not least:

*(c) Clients do need to take into account the importance of fair pricing, which is not just the lowest price, but has immediately to do with a real and fair balance between price and quality. This rewards the parties properly according their positive actions for behaving within a fair competition, thus merely balancing a 'level playing field'.*

Wrapping up the above discussion, one can think that there is still a long way to go to improve the total image of construction industry. And indeed that still seems to be the case, especially during nowadays harsh competition, where there doesn't seem to be a level playing field at all, especially within international construction markets.

However, if there is no start for action. for example by direct or indirect governmental measurements (as being quite big clients, also and probably especially even during crisis-periods), then one might be sure that indeed 'everything will stay the same'. Thus, for creating such real transitions, one should indeed especially focus on the 'frontrunners', as positive examples in the market: Followers will follow, although somewhat later, but indeed will still follow. That approach reduces the need to take care for those, who are not able to follow anymore, thus being part of the 'losers' in the market. And although this is not in the direct interest for everyone, it still has the power for restructuring markets, by separating the 'winners' and the 'losers'. And apart from 'technology-driven' approaches, the behavioural aspect for changing a market is of eminent importance.

In relationship to this, Van den Bosch concluded in her Ph.D.-thesis, related to transition experiments, that the current thinking about innovation remains too focused on technology; technology alone cannot create a sustainable society. At least of equal importance is the behavioural change [Van den Bosch, 2010]. And that is indeed a 'positive' aspect of the 'momentum', delivered during crisis times: It indeed forces people to change their behaviour, resulting into changing business-cultures, improving the construction-industry and it's contributions to society.

## 5. Conclusions & Recommendations

Based on the above described analysis, the following conclusions and recommendations have been defined:

### 5.1 Conclusions

1. *Crisis-times might be felt as negative, but for construction industry they might also help for restructuring the market seriously.*
2. *Positive news travels fast, but negative news often travels even faster; this 'adagium' is also working on social media platforms, which functions therefore as a risk for a company's reputation, but parallel also as a positive chance to improve a company's reputation, influencing also the construction industry's reputation.*
3. *Transparent communication between public and private parties is not a one-way approach, but needs to be done within a two-way approach. This obliges both government and industry to communicate on a well balanced way.*
4. *If the conclusion from the analysed literature is right that transition activities in general focus too much on technology-aspects alone, instead of the at least equally important behavioural aspects, this might indeed result into a stronger need for research into business-cultures in construction industry (and the ways on how to understand and how to improve them) to become a positive effect for construction-industry and its contributions to society.*

### 5.2 Recommendations

- a. *Especially in the situation when one wants to change the negative image of the construction industry, the attention should especially go to the 'winners' in the industry, helping the industry to set them as positive examples for future recovery and growth.*
- b. *Being aware of the social media influence should stimulate companies in construction industry positively to use such tools by themselves also pro-actively, thus being alert on the company's prospect's and client's opinions, activities and future plans.*
- c. *To create a level playing field for fair competition in the market, clients should focus on serious attention for fair pricing; this means especially not to focus just on the lowest price, but always balance it as a price/quality ratio.*
- d. *The research into business-cultures needs a direct input possibility by providing behavioural data from real-life processes and/or projects within industry. This implies the need for a good collaboration between industry and academia. The positive effect can be that industry sees the value of such*

*actual behavioural data, co-analyzed and shared with academia, and implemented to industry again as results to improve business-culture.*

## 6. References

Aruba (2011) "The First PPP-Conference: The Green Corridor"; *article*; 22<sup>nd</sup> of February 2011; The Morning News, Aruba; website: [www.aruba.com](http://www.aruba.com); Aruba, Netherlands Antilles.

Chopra A., C. Collyns, R. Hemming & K. Parker (1995) "India: Economic Reform and Growth"; *paper*; Occasional Paper 134; International Monetary Fund – IMF; Washington DC; USA.

Delatte jr. J.N. (2009) "Beyond Failure: Forensic Case Studies for Civil Engineers"; *Book*; ASCE Press; American Society of Civil engineers; Reston, Virginia, USA.

Egan J. (1998) "Rethinking Construction: The Report of the Construction Industry Task Force"; *Commission-Report*; HMSO; London, United Kingdom.

Feld J. & K. Carper (1997) "Construction Failure"; *Book*; 2<sup>nd</sup> Edition; John Wiley & Sons; New York, USA.

Goodman Peter S. (2004) "China Invests Heavily in Sudan's Oil"; *article*; 23<sup>rd</sup> of December 2004; Washington Post; Washington, USA.

Griffiths H., A.G. Pugsley & O. Saunders (1968) "Report if the Inquiry into the collapse of Flats at Ronan Point, Canning Town"; *Report*; Her Majesty's Stationery Office (HMSO); London, United Kingdom.

Hofman E. (2010) "Modular and Architectural Innovation in Loosely Coupled Networks – Matching Customer Requirements, Product Architecture and Supplier Networks"; *Ph.D.-thesis*; University of Twente; Faculty of Engineering Technology; Enschede, The Netherlands.

Mulholland A. & N. Earle (2008) "Mesh Collaboration: Creating New Business Value in the Network of Everything"; *Book*; Evolved Technologist Press; New York, USA.

Newhouse J. (2007) "Boeing versus Airbus – The Inside Story of the Greatest International Competition in Business"; *Book*; Vintage Books; A Division of Random House, Inc.; New York.

Oster Shai (2007) "China: New Dam Builder for the World"; *article*; 28<sup>th</sup> of December 2007; Wall Street Journal; New York, USA.

Republic of Iraq (2012) "Ministry of Construction & Housing – Guide"; *report*; Republic of Iraq, Ministry of Construction & Housing; Baghdad, Iraq.

Soetenhorst B. (2011) "Het Wonder van de Noord/Zuidlijn – Het Drama van de Amsterdamse Metro"; *book*; Uitgeverij Bert Bakker; Amsterdam, The Netherlands.

Tempelmans Plat H. (1984) "Een Bedrijfseconomische Analyse van Bouwen en Wonen: De Woondienstenvoorziening beschouwd vanuit een Elementenmatrix"; *Ph.D.-thesis*; Technical University Eindhoven; Faculty of Building and Architecture; Eindhoven, The Netherlands.

Tijhuis Wilco & Richard Fellows (2011) "Culture in International Construction"; *book*; published by: Spon Press – an imprint of Taylor & Francis; ISBN13: 978-0-415-47275-3 (hbk) & ISBN13: 978-0-203-89238-1 (ebk); 1<sup>st</sup> Edition published by Spon Press, 2 Park Square, Milton Park, Abingdon, Oxon (UK); Simultaneously published in the USA and Canada by Spon Press, 711 Third Avenue, New York (USA).

Van den Bosch S. (2010) "Transition Experiments: Exploring Societal Changes towards Sustainability"; *Ph.D.-thesis*; Erasmus University & TNO; Rotterdam & Delft, The Netherlands.

Vos M. et al (2002) "De bouw uit de Schaduw – Parlementaire enquête Bouwnijverheid – Eindrapport"; *Final Investigation Report*; SdU-Uitgevers; The Hague, The Netherlands.