Land development as a portfolio of real options

Property Finance: an Interview with ING Real Estate Finance

New regulations for housing associations: Social exclusion in the housing sector

Hotel investments, leasing or managing?
At Brink Groep, we make the ambitions of our clients in construction, housing and property come true. This because of our staff and experience with first-rate projects in the Netherlands. The Waalfront business park in Nijmegen, for instance, is being transformed into a modern residential, commercial and living area. Another example is the development of football stadium ADO Den Haag. For us making the Netherlands more beautiful sounds great, but what about your ambitions? At Brink Groep we stimulate and support your development. You work with colleagues who like to think and act in a dynamic and informal organisation. Our small, specialized teams stimulate innovation and learning. So, you just finished university and are ambitious, entrepreneurial and pragmatic? Please have a look at our website and find a smart job that fits your profile.
Als je doet wat je leuk vindt hoef je nooit te werken, dat noemen wij passie.
A real estate research agenda: new topics?

New media!

Building a solid and successful research agenda within a department of Architecture, Building and Planning is a challenge for a real estate academic. Whereas an educational program in real estate must cover a broad range of disciplines – like finance, law, marketing, planning and engineering – the art of advancing in research is to narrow the focus. Another precondition for a successful research program is to being on top of what is going on in society. Being chair of the annual European Real Estate Society conference allowed me to have a sneak preview of all paper presentations and have insight in the research agendas of real estate groups around the globe.

What is hot in real estate research?

Undeniable the most important change in society affecting real estate is the growing attention for sustainability. Within our department we can be proud of our knowledge on how to built low-energy or even energy-neutral buildings. However, the energy performance of the existing building stock is still below standards. In order to increase the sustainability of this existing stock, the use of new building and installation technology is not enough. Insight into the way the real estate market operates is essential. Research is needed to find ways to stimulate users and owners of real estate to use and build in a ‘green’ way. This has been a reason for a lot of real estate academics to perform research in this field. At the ERES conference in Eindhoven we see that almost ten percent of the paper presentations deals with a topic related to green buildings. These research topics vary from the effect of energy certification on the value of real estate, to the ‘green’ preferences of office occupiers. This last topic presents a very interesting issue. Since users, like tenants of office buildings, started to ask for green buildings – also stimulated by high oil prices and increased awareness – the building industry became encouraged to construct sustainable buildings. Nowadays it is possible to actually work and live in green buildings and sustainability is no longer an exclusive concept for exhibition houses. Adaptation and awareness among users has played a big role in speeding up green building production and reconstruction.

“The adaptation of new (social) media will also have a big impact on the real estate market.”

This adaptation process among users of real estate and the implications for stakeholders in the real estate market triggers me when thinking about new topics for a research agenda. In the same way, the adaptation of new (social) media will also have a big impact on the real estate market. Surprisingly, this topic is almost neglected at the ERES 2011 conference. Only one submitted paper for the ERES 2011 conference is related to this topic!

“The art of advancing in research is to narrow the focus.”

In January I visited the annual conference of the Transportation Research Board in Washington. The degree in which new media was part of a range of studies in transportation surprised me. I am certain that we, as real estate academics, can learn a lot from this field. First of all, new media offers possibilities to collect data in different ways. Using internet and social media makes it easier to involve people in research programs. Secondly, the adoption of new media affects human behavior and subsequently the demand for real estate. New media influences daily activities like working, shopping and living. Offices, shops, houses and in particular public space have to be designed differently. The consequences will reach even further than ‘Het Nieuwe Werken’ (‘The New World of Work’). To get insight in these consequences, more user oriented research in real estate is required. Finally, the use of new media by stakeholders in real estate could support decision making in the real estate market.

Let’s return to the single contribution for the ERES conference related to new media. The paper is called ‘Looking for Property via Smartphone’ and is submitted by Veronika Lang and Peter Sittler from Vienna. Their results show how smartphone features like Augmented Reality affects the search for property. I am convinced that new applications in new media change decision behavior of users and other stakeholders involved in real estate. I’m looking forward to read their full paper and share thoughts on this topic. But first, I’m going into new media myself and get more experienced exploring the possibilities of my brand new iPad.

I.L. Janssen BSc MSc PhD
Ingrid Janssen is affiliated with the chair of Real Estate Management and Development as an assistant professor. From June 15 until 18, 2011 she will chair the annual European Real Estate Society conference, which will be held at the Eindhoven University of Technology.


Land development as a portfolio of real options

A framework for valuing and managing land development projects

In the practice of land development, investment decisions are most commonly statically approached as a now-or-never decision or a series of now-or-never decisions. Through the use of Discounted Cash Flow (DCF) analysis, the feasibility of development projects is assessed. However, DCF methods cannot cope with managerial flexibilities or ‘options’ during the development of the project. These are generally always available.

The calculation process requires the manager to be able to forecast many years into the future to arrive at the economic value and maximum price for which he is willing to procure the land for further development. The route to the final investment stage is however subject to both market risks (fluctuating property specific rents and yields) and project specific risks (uncertain zoning procedures and configuration). These future risks will naturally cause the manager to alter his project in form or phasing to the extent that he has flexibility to act. Because DCF analysis is not able to capture the value of these flexibilities, a Real Options Analysis (ROA) provides a better approach. Before ROA is applied however, it needs to be stressed that the necessary theoretical assumptions are exactly the same as those needed to apply the Net Present Value (NPV) rule.

The binomial option pricing framework of Cox, Ross and Rubinstein (1979) is used to model the market risk of the underlying asset. The underlying assets in the model are specified as the gross market value per square meter net floor area of four possible property types: retail, office, residential and industrial space. Gross market values are based on property specific market rents and gross initial yields. Using the Marketed Asset Disclaimer assumption of Copeland and Antikarov (2004), the discounted gross market value represents the value ‘as if’ the underlying asset is traded on the financial markets.

The diffusion of the underlying asset along the binomial tree is based on a Geometric Brownian Motion process, which is defined by the historical standard deviations of the property specific total returns (RO2/IPD index). Figure 3 shows a graph of gross market values which evolve with a Geometric Brownian Motion. The up and down factors are determined by the volatility $\sigma$, of the different real estate classes: $u = e^{\sigma \sqrt{t}}$ and $d = e^{-\sigma \sqrt{t}} / u$. The risk-neutral probability is determined with $p = e^{-\sigma \sqrt{t}} / u + d$. The exercise prices represent the land and real estate development outlays that are necessary to develop the project and follow a deterministic path over time. Starting at the end of the real estate development stage, the highest payoffs are discounted in a risk-neutral world using backward induction.

In order to value any flexibilities during the development process, they first need to be identified. In Figure 2, the steps and presumed options during the land and real estate development stage are shown. The option to expand or contract the option to switch are mutually exclusive and are exercised (or left unexercised) prior to the project development stage. The option to defer investment outlays and abandon the project are available in both the land and project development stage. Depending on the profitability of its current use, land can be categorized as either cold, warm or hot. Cold land may for example represent forest or agricultural land where there is no immediate outlook on a more profitable use as documented in the outlining of the zoning structure. The acquisition of land in this phase can be seen as a strategic growth option. Subsequently, an announced change in the zoning structure can lead to a more profitable development of an area and causes the land to be labeled as warm. When the final zoning plans have been established, land is labeled as hot. The project specific risk in the form of uncertain zoning procedures can be estimated using subjective probabilities.

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The ROG Matrix is able to categorize any project throughout the development cycle by its current and potential future profitability."

Conclusions

The ROG Matrix shows that when static derivations of project NPV’s turn out negative, negotiating flexibilities in development contracts can provide the possibility for the project to end up ‘in-the-money’. Options are instruments to manage project risk and provide management with tools to steer projects through difficult times. Making option values explicit is important for a couple of reasons. First, it can provide a quantification of the value of flexibility and therefore a better impression of what a development right is really worth, opposed to a point estimate of a DCF-valuation. The additional value may tip the scale to follow through with projects where they would otherwise have halted. Second, as land positions held by large project developers are difficult to value with DCF models due to their inherent option characteristics, they are also difficult to finance on a project basis. Real options analysis gives insight into the value of the inherent option features of holding a land position and may justify a higher value in the developer’s balance sheets. This would subsequently increase his solvability and therefore his resilience against negative economic shocks.

Third, the model as proposed in this article naturally forces managers to consider the possible range of future project values and to think how they would act if a particular future state of nature were to materialize. This thinking process automatically reveals the need to see projects through an options lens as multiple future states of nature require a similar amount of strategies which can only be provided by flexibility in contractual agreements. As the importance of option values becomes more widespread and ‘real’ option valuation methodologies may become common practice in the management of development projects.

References

On the 7th of April this year Chief editor Finance and Real Estate property interviewed with Mark Boerebach had an interview with Mark 2 joined ING in December 2007 following ten years at Barclays where covering commercial and private property lending. Elmer graduated at the Loughborough University.

ING Real Estate Finance

On the 7th of April this year Chief editor Stefan Janssen and editor Jeffrey Boerebach had an interview with Mark Ford - Director Structured Products, based in London - and Elmer Feenstra – Managing Director Structured Products, based in The Hague – of ING Real Estate Finance which is part of ING Bank. The credit crisis changed the behavior and requirements of banks that finance commercial real estate. In this interview we discussed the changed that led to an increased use of alternative funding structures.
The loan is financed at 65 percent (PIK element, payment-in-kind). Figure 2 shows such a financing structure. The junior debt holder still ranks in priority to the junior debt (usually referred to as equity). For the existing market that means that the IcR is used as an early warning sign by the lenders. For example, an ICR of 1.1 is used on the senior debt, while the junior debt could have an ICR of 1.5. Using this ‘early-warning system’, the lenders know when to intervene and then it gives a legal title to do so, thus making the mezzanine structure more stable.

Private Equity Firms
The current market has opened up opportunities for additional leverage in certain circumstances. Ford explains that increasingly more private equity firms have on the rise with opportunistic strategies when making investments. “For example, we could provide senior debt and, maybe add a mezzanine loan from one of the funds. In addition another (private equity) fund could provide a further layer of junior debt on top of the mezzanine loan, which then becomes the first loss piece after equity. In this example some funds could go up to 95 percent LTv, but they will require a very high Internal Rate of Return and usually warrants over the existing shares with profit sharing. This makes them very subordinated and in some cases the upper mezzanine layer can be treated as equity”. For the existing market that means that the borrower is allowed some refinancing, but their own equity is being reduced because of the drop in values. The opportunistic nature of private equity funds is a remarkable difference with the low-risk appetite and generally long-term real estate lenders (credit crisis and conservative senior lending terms have left a gap in the capital as well as well for traditional real estate lenders (credit crisis and Basel II/III capital rules have left a gap in the capital structure and attractive risk-reward for mezzanine lenders). Most senior lenders comfortable with a subordinated position behind them. Deals require more equity and WA financing margins are significantly higher currently, higher margins are offset by lower swap rates.

Other Equity Offerings
As equity and bond markets continue to trade with severe volatility, many investors are looking for alternative investment strategies. They search for higher yields or for equity investments that do not fluctuate as much, as for instance stocks. According to Feenstra, this quest has led to a tremendous growth in the private placement sector. “The larger real estate clients want to do a bond-issure, either on the European bond market or in the US private placement market.”

A private placement is a security that is exempt for registration under Securities and Exchange Commission (SEC). Since detailed financial information does not have to be included, it can be issued relatively fast. The Eurobond market on the other hand is there for larger corporations (including real estate companies) with ong going financing requirements as they will usually issue bonds on a regular basis.

However, there is a big difference in mezzanine funding before and after the financial crisis. Ford explains that before the crisis the senior lender would issue loans up to 80 percent LTv with an interest coverage ratio (ICR) of as low as 1.1. The ICR is used to determine if a company is able to pay its interest on outstanding debt. The mezzanine slice on top of that loan was set to 15 percent LTv. “But nowadays the senior lender will provide 65 percent LTv. The mezzanine funds grant loans between 65 and 85 percent LTv. In such a case equity is your first loss, the mezzanine or junior fund takes the next loss and the senior will be most secured and thus have the best risk profile”. Within these structures the ICR is used as an early warning signal by the lenders. For example, an ICR of 1.8 is used on the senior debt, while the junior debt could have an ICR of 1.5. Using this ‘early-warning system’, the lenders know when to intervene and then it gives a legal title to do so, thus making the mezzanine structure more stable.

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Municipal Real Estate of Nijmegen

Unlike commercial real estate, the key goal with municipal real estate is to obtain added value on a social level for the community. This type of real estate is often associated with deficits in the exploitation, which are covered with tax money. A large proportion of real estate with social value is controlled by non-profit organizations such as educational or healthcare institutes, housing corporations and municipalities. In this article the governmental point of view is shown by Carel Sweens, Strategic Advisor Real Estate of the municipality of Nijmegen.

Nijmegen, past bricks alone

Like most of the Dutch municipalities, the municipality of Nijmegen has got a real estate portfolio, containing welfare properties, youth-, sports-, social and cultural buildings, educational facilities, commercial facilities, and offices which combine some of these functions. The latter is sometimes called multifunctional accommodations (MFA) or facility centers (voorzieningsharten). These MFAs have free access for citizens during the entire day and they are significantly emerging since 2000. They offer space to childcare, cultural and social activities and supporting catering services. Other examples of municipal real estate are theaters, concert halls, libraries, swimming pools and playgrounds.

Well thought programming and facilitation should lead to synergy between the services offered in the building. The collected supply of services offers citizens a timesaving ‘one-stop-drop’ and gives a neighborhood a central location around which most activities are focused. The municipality of Nijmegen is the only owner of institutional accommodations within its territory and also controls the programming, facilitation, management and operations of the accommodations.

Other forms of social relevance for real estate

Other types of buildings owned by the municipality of Nijmegen are buildings which are not suited for alternative functions, such as churches and mills, or objects which represent a significant amount of emotional value e.g. monuments or characteristic buildings. The portfolio of most municipalities also contains commercial real estate; the governmental officials need to be housed, and sometimes policy prescribes to control the supply or restructuring of parking spaces. This can no longer be defined as real estate with social value, but is indispensable for the functionality of the municipality.

In such a compound portfolio, the following definition is commonly accepted: buildings are regarded as municipal real estate when:
- it is held in the interest of the housing of its bureaucracy.
- Buildings with great emotional value are not excluded from this.
- it is an added value to the market;
- it has got financial or political benefits for the municipality such as profitable offices or parking lots.

In addition, the management scheme of municipal real estate is vastly different than one would expect. The municipality of Nijmegen has chosen for further decentralization, which means that the funds which are offered by the higher authorities are passed through to ‘players in the field’ such as educational institutes. The institutes are granted an amount which should make it possible for them to fulfill their housing needs and control the interest of every participating institute.

Benchmarking - the next level

Municipal social real estate is in the spotlight at the moment, because of the large capital locked up in bricks and the former non-transparency of the portfolio of various municipalities. The total book value is estimated at more than 20 billion Euros and covers 45 million square meters*. The current market developments, in both fields of commercial real estate and housing corporations, a benchmark certified by the Dutch Property Foundation (ROZ) is used and delivered by the Investment Property Databank (IPD).

This benchmark offers new methods to provide insight in the value of the Dutch municipal real estate total portfolio. The composition of real estate portfolios, as well as the total expenditures and incomes generated from social real estate, was never measured. In this benchmark by offering data is steadily growing. Currently, the real estate portfolio’s of all participating municipalities represent a value of 5 billion Euros and needless to say, there is a lot of catching up to do.

The municipality of Nijmegen has cooperated from the beginning, but to be able to join this benchmark, one has to have insight in their own portfolio in order to be able to offer the data needed. Key to gaining this insight was the foundation of corporate real estate management on a governmental level. Administrative and official control of the portfolio of the municipality of Nijmegen is centralized and focused on the portfolio as a whole. Certain data had to be obtained, valuation for tax purposes versus administrative value, maintenance levels, market renting prices and cost-renting prices.

“Nijmegen is past thinking in bricks alone.”

Management and Maintenance

The management of real estate doesn’t necessarily imply that municipalities need to administer all the associated responsibilities themselves. The municipality of Nijmegen outsourced its directing management and maintenance for a period of five years. This was also due to the insight it had in its portfolio, otherwise it couldn’t have outlined the contracts to DHV – a leading international consultancy and engineering firm. The benchmark focuses on municipal real estate that the municipalities want to keep. The strategic ownership of certain properties isn’t included in the benchmark, mostly because it is transferred to a development company and is part of the urban restructuring processes. Such strategic objects aren’t aimed at preservation but transformation.

Effects of modeling and measuring performances

The key questions are how much municipal real estate a municipality should hold and who should be accountable for development, realization of projects and management of the current portfolio. To answer these questions, first the social need for real estate and the manner a municipality can contribute to the demand should be measured. Municipalities have to realize that stakeholders in the public domain contribute with tax money and that it is very important to maximize the results with the available funds. They should de-compartmen-talize and look beyond their working fields.

Aside from the public demand or the goal of its own organization, together with public-private initiative or with a directing role for the municipality, there is the desired number of facilities in facilities centers. This approach starts with a structural plan for facilities and gives insight in the optimal partnerships between public and private entities and/or the responsible actor.

Development and realization of municipal real estate from the programming point of view consists of planning, management and maintenance, but on the other hand, it deals with the unsalable part of social real estate. The project and program of requirements is aligned to the first users and it is uncertain if the property still meets current demands after a few years in use.

The social value is a rather complex variable and the municipality of Nijmegen together with consultancy firm Berenschot, have come up with a model which provides municipalities more insight in the social revenues of accommodations and portfolios. This model splits up the social revenue in two components; the first factor in which the accommodation succeeds to achieve the target groups in a given area, second the contribution to the political goals. A framework had to be developed to measure the performance and it provides us with valuable data in three levels.

- The framework is guiding when there is a decision point for the administrator/manager to choose a new tenant. It shows which of the targeted renters provides the highest social revenue. Subsequently the framework gives an indication of the revenue of the accommodation as a whole and a large period of time.
- If the framework is applied to current portfolios, it gives a detailed view of the results of these portfolios. Underperforming properties can be prevented and the framework gives guidelines to optimize the portfolio and terminate certain properties or change its destination.

Future results can be linked with indicators of neighborhoods, social safety and abilities to complete the whole information package. Currently this approach is tried out in the sportsector together with BMC (a consulting and management bureau that supports governments to solve complex problems), and it provides much needed results and indications on how different objects perform within the portfolio of the municipality of Nijmegen. This undoubtedly leads to a better use of opportunities and reduce costs and tax money.

Conclusion

In short, the recent interest for municipal real estate and the financial and social importance require accelerated professionalizing and outsourcing of the infrastructure. The municipality of Nijmegen has made large improvements by centralizing its real estate data, further decentralizing the responsibilities of towards the playing field and outsourcing its directing and maintenance. By combining all the available knowledge and skills, the municipality has proven to be also capable of working out the TCO – total costs of ownership. The knowledge developed by years of experience is used in new projects (hardware) and customer service, customer satisfaction research and policy development (software). A shift in focus shall occur in the near future when municipalities target the question how a social property fulfills a certain social need, which participants should join the project and which one to be held responsible and further control of the whole real estate cycle, including measuring the revenue of its portfolio.

*Source: Bert Teunen, researcher at Investment Property Database

C.P.M.A. Sweens
As a senior government official Carel Sweens has over forty years of experience at municipal real estate. His main focus was the realm of public entrepreneurship and cooperation between government and commercial/community organizations. A large part of his working life he has been controlling public-private partnership contracts (PPP). Currently he works as the strategic advisor real estate of the municipality of Nijmegen, where he is mainly concerned to manage the municipality’s real estate portfolio addressing its social revenues.

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New regulations for housing associations

D.W.Q. Havermans MSc & E.C. Stoop MSc

Since January of 2011, Dutch housing associations are obliged to assign ninety percent of the annual available housing stock with monthly rents up to € 652.52 to households with a gross annual income below € 33,614. This is one of the consequences of regulations imposed by the European Union. These regulations imply, among other things, that financial governmental support1 of activities of the Dutch housing associations should directly be related to households with low-incomes. When housing associations do not meet this condition, they could lose financial governmental support.

The regulations have caused a great deal of controversy within the non-profit housing sector in The Netherlands. Among other things, the measures have consequences for the middle income group with a gross annual income above € 33,614 and below € 38,000 (of course these financial limits can differ amongst regions). In general, a household within this group does not have access to the social rented sector anymore when moving. To give an impression of the number of households; approximately 534,000 households in the rented sector have two possible alternatives; namely the owner-rented sector and the financial governmental support.

The foregoing clearly illustrates that households who are inclined to move and have a middle income fall between two stools. In a way this could be regarded as a form of social exclusion; this group faces difficulties accessing affordable housing. Of course in every society there exists a certain amount of social inequality. However, sometimes existing forms of social exclusion evolve into unwanted exclusion. In our opinion measures should be taken that facilitate the housing needs and the financial means of the middle income group. This calls for alternative and innovative forms of ownership, financing, and management in the housing market.

Therefore, we encourage initiatives, some of them already implemented by housing associations, that create alternatives between the owner-occupied market and the (liberalized) rented market.

D. W. Q. Havermans is a PhD student at the chair Real Estate Management & Development at the Eindhoven University of Technology (TU/e). His research show the emotional ties that people form with their living environment and the application of branding and marketing techniques in the revitalization of residential areas. After graduating in 2007 from the master track Human Geography at Utrecht University, Elke Stoop’ graduated in 2009 from the master track Real Estate Management & Development at the Eindhoven University of Technology. She now works as a researcher at research institute Interact – which is connected with the TU/e.

References


1 Price levels 1 January 2011
2 Housing associations can get loans which are guaranteed by the RSBF (Guarantee Fund Non-profit Rented Sector) and the BNG (Bank of Dutch Municipalities). So housing associations can lend capital under advantageous conditions and thus profit from lower interest rates. This is regarded as financial governmental support.

Social exclusion in the housing sector

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Regarding the owner-occupied market, households with a middle income encounter a financial barrier; due to the economic crisis, financial institutions apply more stringent mortgage conditions, particularly for double-income couples. Kromhout et al (2010)

Problem

The building industry is plagued by failure costs. Every year the Dutch building industry loses an estimated 5 to 15 percent of the total turnover as a result of mistakes in the building process. The building industry acknowledges the problem and is searching for solutions, but fundamental improvement is slow. Companies and clients cling to traditional methods, each continuing to focus on achieving individual goals, blinded to the idea that working together towards a shared goal can measurably improve performance.

Solution

One of the strategies for structurally decreasing failure costs that is generating increasing attention is supply chain management. This is the systemic, strategic coordination of traditional business processes across companies within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. Supply chain management addresses one of the root causes of failure costs in the building industry: insufficient pursuit of common goals by parties within the chain. By creating a climate of heightened cooperation and encouraging companies and clients to focus on shared goals, supply chain management creates win-win situations.

An important principle of supply chain management is that the parties within the chain – the client, the developer and strategic partners such as architects, suppliers and contractors – work together on a systematic basis, independently of specific projects. Involved parties experience a steep learning curve whereby the development, building and maintenance processes become increasingly efficient. To achieve this, a new way of working is required: a shift in focus from individual building projects to the creation of a broader program in which multiple projects are carried out by the same strategic partners.

The application of supply chain management results in the delivery of a better end-product at lower costs. Parties that systematically work together are able to learn from past mistakes and can better anticipate the needs and wishes of their partners. This results in fewer design flaws, fewer problems during the build and a building with lower operating costs. This saves money, but also improves the quality and turnaround time of projects.

The improvement in performance is measurable for all parties involved. A pilot project between the social housing corporation Comwonen and their building partner Dura Vermeer Bouw Rotterdam, has delivered significant results. From an initial investment of € 200,000, the two companies have recovered € 1,500,000. This monetary incentive and the positive experience of the participants have encouraged the businesses to implement more pilots, also with other partners.

Opportunities for young professionals

Implementing supply chain management challenges companies and employees to work together in a new way. Knowledge is required to implement change, but this can only be created through experience. Companies are reluctant to try something new due to insufficient knowledge. This vicious cycle must be broken in order to make way for increased professionalism in not an option, but a must. This is the challenge for the coming years.

Deloitte Real Estate Advisory is working hard to help real estate companies achieve Supply Chain Excellence. Our real estate practice is growing due to the fact that our supply chain excellence program is generating excellent results for our clients. Our growth means new opportunities for graduates who want to start their career in real estate. Students with a background in real estate, lean six sigma or supply chain management who want to become experts in the field of supply chain management are more than welcome to apply. For more information visit our website www.deloitte.nl/realestate, our recruiting site www.werken@deloitte.nl or our real estate inhous days.

Drs.ing. Marcel Noordhuis
Director Deloitte Real Estate Advisory


Column

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ADVERTORIAL

Deloitte
The world is changing. Businesses are becoming increasingly complex and the importance of research and objective analyses is growing. According to Jonathan Trevor, co-director of the Centre for International Human Resource Management at the Cambridge Judge Business School, a shift from the industrial to information age in the current society causes this rise in complexity. Especially since the global financial crisis, business complexity has grown substantially.

The Economist Intelligence Unit conducted a survey amongst 300 senior executives from around the world from a range of different industries. An overwhelming majority of the survey respondents thinks that the complexity of doing business has increased during the financial crisis. Many organizations need to constantly upgrade their services to meet the greater expectations on part of the customers. Increasing customer demands for more differentiation in the quality and range of products and services has been the main driving force for the growing complexity. This complexity leads to a decrease in transparency and an increase in risks. (Economist Intelligence Unit, 2011)

Jones Lang LaSalle’s Global Real Estate Transparency Index (Figure 2) quantifies the transparency of real estate markets across the world. Rising levels of transparency are usually associated with the rising investment characteristics and performance. In short, it makes real estate investment decision-making easier. Jones Lang LaSalle has been charting the transparency in real estate since 1999. The past two years, the 2010 Global Real Estate Transparency Index reveals a notable slowdown in progress of real estate transparency: the average improvement across the markets has halved compared to the indices from 2006-2008 and 2006-2004 periods. Jones Lang LaSalle states that the recent troubles in global financial, economic and real estate markets have impacted the market behaviour. The focus on survival instead of market advancement led to a more cautious approach by the players in the real estate market, so the risks of investments could be controlled better.

Even though high levels of transparency could have never eliminated all risks for investors or occupiers, the real value of transparency should become more evident after the financial crisis. Markets with high levels of transparency should be able to restructure their economy faster than those with low levels of transparency, because risks can be estimated better. “Higher transparency moves real estate from the world of unknown hazards and outcomes to the world of known hazard and probabilistic outcomes” is stated in Jones Lang LaSalle’s Global Real Estate Transparency Index. So what is the impact research is able to make when dealing with this increasing complexity and demand for transparency? Obviously, research can help improve the transparency into the markets’ quality greatly, thus making the success or failure of any project closely intertwined with the insight created by the obtained knowledge. It is very useful in order to keep pace with modern trends and analyze the needs, demands and desires of costumers. The complexity of today’s business only increases the demand for research, since insight into complex issues can only be gained by extensive research. Either way, research will always help accurately and systematically collect data that will answer questions.

**Articles**

In the article ‘Research proves its essential role for the real estate sector’, Mr. Langbroek will talk about the importance of research to break the trend with the past. The history of research in the real estate sector in the Netherlands will be addressed shortly, after which he will discuss in what manner various stakeholder – like public authorities and market participants – can benefit from research nowadays.

The article ‘What about the user in real estate research’ by Mr. Heijs and Mr. Smeets will discuss the shift the real estate market undergoes from a supply to a demand orientation. Since this is not a very straightforward adaptation, suppliers are in search of new means to cope with this situation. As researchers of the Chair of Real Estate Management and Development of the Eindhoven University of Technology, they will highlight the main themes in the field of user oriented real estate research.

The increasing number of cars nowadays creates a growing competition between different parking facilities in inner city areas. In his article about car drivers’ evaluation of parking garages, Mr. van der Waerden will try to answer how different aspects of parking garages are evaluated and what role these evaluations have in car drivers’ decision making process. Because parking facilities have become very interesting and important objects in the urban real estate market, it is clear that this study offers a wide range of practical and managerial implications.

Lastly, Mrs. Verschoor will discuss the change that is needed in risk management in real estate development projects. Although the real estate market already grew a notion for the importance of risk management, this still wasn’t enough to prevent investors from losing money due to unforeseen risks during the recent crisis. She states that not only market risks, financial risks and idiosyncratic risks, but also operational risks need to be addressed when (re)developing real estate. This area in de research field of real estate can greatly be improved over the coming years.

**References**


This also applies to the real estate market. One might hereby think of investment decisions which are made by real estate market participants, or government planning policy. But also take in mind the demographic developments and the changing market and price conditions and which influence their decisions relating to accommodation.

As a result of the crisis, one might say that there is a break in the trend on the real estate market. This particularly relates to the constantly changing market conditions and a different perception of the market risks which are present. The degree of certainty with which decisions can be made has greatly diminished due to this possible break in the trend. The challenge for real estate market participants now lies in being able to deal with these constantly changing market conditions and the market risks which are currently all around. Thorough knowledge of the market, insight into macro-economic and market developments, and a well-founded broad vision are necessary. This article examines the important role that research now plays in meeting these essential needs in the real estate sector.

Looking back on research

The time when investment decisions were made on the basis of ‘gut feeling’ and when prices were calculated by using a simple capitalisation factor (a number times the initial rent) are long past. The real estate sector has been realising the importance of research and related studies and consultancy assignments into private, public and institutional investor strategies. The presently work with on a portfolio strategy at an listed property fund KFN, where he was responsible for acquiring, restructuring, performance manage- ment, and involved in the set-up of a West-European office fund.

Ruben Langbroek, MSc MSRE MBCS

Ruben Langbroek currently works at Jones Lang LaSalle, where he heads the Dutch Research department. Furthermore, as Strategic Investment Consultant he is responsible for market and financial feasibility studies and consultancy assignments into private, public and institutional investor strategies. He previ- ously worked as a portfolio strategy at an listed property fund KFN, where he was responsible for acquiring, restructuring, performance manage- ment, and involved in the set-up of a West-European office fund.

FIGURE 1

Up-to-date market information has become very important

Our research proves its essential role for the real estate sector

“If we knew what it was we were doing, it would not be called research, would it?”
(Albert Einstein)

There have been quite a few changes since the crisis. It is important to look back at these changes, in order to be able to say something useful about future market developments. After all, decisions being made today are based on expectations about the future.

And in a globalising world where the speed and interconnectedness of all those changes is rapidly increasing, it is becoming ever more important to monitor changes closely.

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demographic and economic developments which differ between regions. Spatial planning, harmonisation and programming should all be executed on the basis of regional market analyses. Planning decisions, relating to the office policy to be pursued, must therefore be based more than ever on expectations about the future, supported by different levels of research. The close monitoring of changes in the demand from the future, supported by different levels of research. The role of market research will become even more essential in the new era. Research will lead to more transparency (which means improved valuations), an improved insight into the future return and risk characteristics of the property sector (which means more reliable ALM-studies), and to a spatial planning policy that is based on realistic expectations (which means a healthier real estate market). But as indicated, research is also making an important contribution to the professionalisation of the sector. Furthermore, it is a vital element in supporting public authorities and market participants in their decisions. This involves varied research in the area of finance and investment, macro-economic and demographic perspectives on the real estate market, performance and risk management, valuation, planning and development, and spatial policy. It is not a coincidence that these subjects are also themes to be covered at the 2011 ERES conference. It shows that research is key for the real estate sector. Times have changed, but — to refer to Einstein’s quote — luckily we now definitely know what it is we are doing with research.

Research is key
Reference has already been made to the trend break with the past. The break in the long-term trend means that future developments are more difficult to predict. The role of market research will become even more essential in the new era. Research will lead to more transparency (which means improved valuations), an improved insight into the future return and risk characteristics of the property sector (which means more reliable ALM-studies), and to a spatial planning policy that is based on realistic expectations (which means a healthier real estate market). But as indicated, research is also making an important contribution to the professionalisation of the sector. Furthermore, it is a vital element in supporting public authorities and market participants in their decisions. This involves varied research in the area of finance and investment, macro-economic and demographic perspectives on the real estate market, performance and risk management, valuation, planning and development, and spatial policy. It is not a coincidence that these subjects are also themes to be covered at the 2011 ERES conference. It shows that research is key for the real estate sector. Times have changed, but — to refer to Einstein’s quote — luckily we now definitely know what it is we are doing with research.

What about the user in real estate research?
In most Western countries, real estate markets undergo a shift from a supply orientation into a more demand oriented one. The voice of users/customers becomes increasingly important and suppliers have to adjust their methods of operation accordingly. This is not a straightforward adaptation and suppliers are generally in search of novel means to cope with a new situation, in which users or customers demand more control.

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of this research is whether it is possible to manage a housing portfolio by steering on customer perceived value. Housing is seen as an important involvement product, during the use of which customer value is created. The underlying assumption in this approach is that customer value is a precondition for satisfaction. The research shows that, in order to create customer perceived value, housing managers have to deliver a mixture of physical, social, and aesthetic features that are valued by the inhabitants and that may play a part in the formation of their own place identity. They may help to alleviate the plans and to overcome resistance against the intended measures (see Havermans, Heijs and Smeets, 2009; Havermans, Heijs and Smeets, 2010).

New buildings and concepts

Many organizations involved in building development or new building concepts (project developers, local governments or housing associations) are searching for newer methods to incorporate user preferences in a way that fits the growing importance of the demand side. In our group, research within this theme is carried in two complementary directions. The first type is a conventional object oriented approach: demand is considered as a set of preferences of the future users regarding the features of a real estate object. Thus, demand and supply are established along the same dimension of object characteristics. Attempts to grant users a greater say in design and development range from offering a larger, but still limited, number of options (e.g. changes in the number of bedrooms, the type of kitchen, etc.) to new concepts, such as (collective) private commissioning in which users are, in fact, in control of the project. The essence of this latter strategy is that new dwellings are developed by the end user to lower the costs and further their contribution, thereby improving the price-quality ratio. A necessary condition is that the commissioner (user) takes the initiative to build and has the disposal of the land (optional). The purpose of this research is to develop innovative concepts to empower users in the housing market and to fill the gap between the rental and owner occupied market.

The second type consists of experiments with an alternative, functional approach, in which demand and supply are viewed as different dimensions. Whereas the supply side still refers to objective characteristics, demand is taken as a collection of activities and goals that can be facilitated by those characteristics of a new building or building concept (what users want to do instead of what they want). This method (USE: user needs by systematic elaboration) is new methodology for establishing possible conflicts between the intended identity (brand) of those areas and the actual implications of the refurbishment plans on the one hand and the attachment of inhabitants to the physical elements (such as the furniture fighting) that are affected by the plans on the other. Knowledge of environmental aspects that are valued by the inhabitants and that may play a part in the formation of their own place identity may help to alleviate the plans and to overcome resistance against the intended measures (see Havermans, Heijs and Smeets, 2009; Havermans, Heijs and Smeets, 2010).

Steering on customer value alone, however, is not advisable. Other parameters like the strength of the relation with the landlord (e.g. loyalty), price/quality relations and the remaining life span of dwellings are also important. One example of the ensuing tools is a decision table that allows suppliers to devise generic strategies for asset management by taking into account the various management considerations as well as user preferences (Smeets & Maussen, 1998). These strategies may include renovation or new housing developments, including new concepts (which will be addressed during the next themes).

Renovation and refurbishment related research

Subjects in this theme may span the entire range between small and large renovations and complete renewal of parts of the built environment. Often, projects such as the satisfaction studies for housing associations mentioned above will encompass an analysis of the suitability of the real estate objects for future use and recommendations for renovation in view of sustained suitability.

In other cases research projects consist of a so-called post occupancy evaluation (POE) of separate buildings, specifically aimed at formulating renovation measures. Besides the usual instruments (interviews and surveys among users, visual inspection, etc.) a new methodology in this line is being tested for application in POE (this is explained in more detail in the next theme). Examples of the latter type of research are the evaluations of residential care facilities and university buildings like the TUGs sporting facilities and chemistry department, which are largely based on input from the various groups of users of those buildings (Jongen, 2010; Heijs, 2009a).

On a larger scale level, PhD research is being carried out to improve the processes of branding and restructurering of problematic neighborhoods in Dutch cities. The project includes the development of a theoretical model and a new methodology for establishing possible conflicts between the intended identity (brand) of those areas and the actual implications of the refurbishment plans on the one hand and the attachment of inhabitants to the physical elements that are affected by the plans on the other. Knowledge of environmental aspects that are valued by the inhabitants and that may play a part in the formation of their own place identity may help to alleviate the plans and to overcome resistance against the intended measures (see Havermans, Heijs and Smeets, 2009).
Decision-making in real estate development: application of game theory

Decision making in real estate development projects has generally undergone a number of important changes over the last decades. This transition represented a shift from governmentally dominated top-down spatial planning to bottom-up, public-private engagement schemes in real estate development (Tam et al. 2009). The new policy implies pluricentric network steering – in which several public and private parties play a role – instead of traditional hierarchical top-down governmental steering.

In current real estate development projects many stakeholder groups are involved, and this stakeholder involvement is different in each project. The most important stakeholders are municipalities, landowners, end-users, financiers, and provincial and national ministries. Furthermore, development companies, building contractors, designers, consultants, environmental groups, and citizens are often involved. Real estate development cannot proceed without commitment of these stakeholders, because the decision processes are interdependent: the outcome of the development process cannot be determined by one player.

Because of the mutual interdependence between these stakeholder groups, there is a necessity to collaborate in order to achieve something. This asks for a new emphasis in how to conceptualize mutual relations, giving attention to mechanisms that coordinate and integrate stakeholder and that promote cooperation. Because of this, many scholars showed an interest in the application of network steering in urban renewal projects, providing for a new stream in literature. This resulted in a search for scientific methods and tools enabling planners to support stakeholders’ participative decision making (see Tam et al. 2009). However, the influence of distributional power, hierarchy, and conflict have been relatively neglected in the recent process models, whereas it is still a key component when studying the relation between actors involved in urban development (Muninoy 2007). There have been very few attempts to analyze systematically how both relational aspects play a role in multi-actor decision making. Analyses of the structures and processes of real estate development projects will be effective only to the extent that they recognize the roles of both cooperation and conflict. In this article, we expound that game theory which provides a suitable basis for studying interactions in real estate development projects.

Game Theory

Game theory (e.g. Luce and Raiffa, 1957) is built upon the assumption that the decision making of players is always interdependent. Consequently, players have to think ahead and devise a strategy based on expected countermeasures of the other player(s). Basically, game theory deals with the modeling of situations of conflict and cooperation, together with the analysis of these models using mathematical techniques. The principal objective of game theory is to determine what strategies the players ought to choose in order to pursue their own interests rationally and what outcomes will result if they do so. Because the focus lies on situations in which parties have conflicting and supplementary interests, and interdependency in behavior, game theory is well suited to describe and analyze real estate development and real estate decision making situations in which two or more actors or decision makers are involved (Sumsara et al. 2010).

Basic assumptions underlie the theory are that decision makers pursue well-defined, exogenous objectives (they are rational and try to maximize their own utility), they have an infinite good memory (perfect recall), and they take their knowledge or expectations of other decision makers’ behavior into account (they reason strategically). Game theoretical models are abstract representations of real-life situations, which allow them to be used to study a wide range of phenomena. They consist of at least three basic elements in order to predict interaction outcomes: players, strategies, and payoffs.

The players in a game are the decision-makers; a player is assumed to be a solitary actor who makes decisions on his or her own behalf. Furthermore, the strategy $S$ is a complete plan of possible actions $A = \{a\}$, defining what player $i$ might do in any given situation during the game, aiming for utility maximization. The total set of strategies available to player $i$ is denoted as the strategy set or strategy space $S_i \subseteq A$. All players make their own choices by selecting a strategy, but the result for each player is partly dependent on the choice of the other player. This resulting set of strategies for each of the $n$ players in the game is denoted as a strategy combination $s = (s_1, \ldots, s_n)$. The third element in the game theory is payoff. Player $i$’s payoff is denoted as $\pi_i(s_1, \ldots, s_n)$, and this can be defined as a number associated with each possible outcome resulting from a complete set of strategic selections by all the players in a game. Generally, higher payoff numbers attach to outcomes that are better in the player’s rating system.

The conjunction of chosen strategies and related payoffs is defined as the outcome of the game. A clear distinction has to be made between the concepts of outcome and payoff; an outcome is the decision, if any, arrived at by the players collectively, while the definitive payoff of an outcome for a player is the value of that outcome for the player. Because players will have different valuation systems over the set of possible outcomes, and hence have different preferences over the outcomes, this is where conflicts can arise. In order to predict the outcome of a game, focus of game theoretical models is on possible strategies of the players and on selecting one or more strategy combinations as reflecting the most rational behavior by the players. A strategy combination that can be achieved when more than one player determines his or her strategy in the game is defined as an equilibrium $s^* = (s_1^* , \ldots , s_n^*)$; players choose equilibrium strategies in trying to maximize their individual payoffs. In order to find equilibria, the players’ most preferred strategies should be defined. Solution concepts are suitable for defining such preferred strategies; a solution concept $F = \{s_1^* , \ldots , s_n^*\}$ is a rule that defines an equilibrium based on the possible strategy combinations and the payoff functions.

Application

Game theory can be classified into cooperative and non-cooperative game theory, both matching narrowly with real estate development decision making processes. Cooperative game theory deals with situations in which groups of players already agreed to cooperate. These players aim for coordinating their actions, instead of trying to divide in joint profits. Because these joint profits often exceed the sum of the individual profits, cooperative game theory deals with the question how to divide these joint profits. This might be applicable to situations in which public and private parties negotiate over the division of risks, expenses, and profits in a public-private partnership contract. Non-cooperative game theory primarily deals with the analysis of conflict situations. A conflict can occur when the interests of several decision makers are opposed or only partly coincide. Each decision maker will usually choose an option in his own interest, which need not be in the interest of the others. These individual decisions can result in worse outcomes for all players compared to a coordinated decision. In this section, we will present an example of a non-cooperative game theoretic model, applied on Brownfield Redevelopment.

Environment of the game

To set up the game, we defined the institutional-economical environment. Therefore, we used the present land development models in the Netherlands (Sumsara et al., 2010). All models (“Table 1”) are characterized by initial situation on the market of ownership, defined parties that acquire the land, the one that service and reparel the land, and the parties that acquire the building plots. Within these models, the role of the municipality can be active or facilitative. Specifically, we addressed an active approach from the government, and within that group of models a PPP (Public Private Partnership) model. This choice was based upon the fact that active approach is mostly common in the Netherlands and PPPs are common practice.

A common type of PPP is a Joint Venture Company (JVC). In the game we are analyzing a specific decision: to form the JVC or not. The municipality invites a developer to form a JVC to redevelop a project of a Brownfield Redevelopment. In order to simplify the game, we assumed that the land has already been acquired by the municipality. That is an exception of a PPP model since the acquisition is usually conducted by a JVC (see Table 1). When formed, the JVC will service the land and deliver a detailed land use plan and parcelization. Therefore, the final product of the JVC is the urban land with immediate possibility to sell the building plots.

Besides setting the game in a specific institutional-economical environment, the involved players based their decision to form the JVC or not on several other specific contextual conditions. At first, they consider a Brownfield that is “… any land or property which has previously been used or developed and is not currently fully in use, although it may be partially occupied or utilized. It also may be vacated, deserted or contaminated. Therefore a Brownfield site is a location not available for immediate use without intervention” (Akker et al. 2000). Secondly, we delineated the problem to the initiative phase of a
Brownfield Redevelopment on the urban district scale. Thirdly, the size of a Brownfield is in the range of one to ten hectares. Finally, we assumed that different decisions would be more or less present depending on the region of the research (this research focuses on the Netherlands).

Game type
We restricted ourselves to analysis in the extensive form or a game tree analysis where the players act sequentially. The extensive form of the game compared to the strategic form brings more realistic representation of the reality. As mentioned before the game is non-cooperative.

Players of the game
We focus on two groups of actors in whole Brownfield Redevelopment process. These are the Municipality (M) and Developer (D) that would potentially form a JVC.

Strategy
At first, we will determine the negotiation issues that are treated as strategies in the game. In this game, we address two issues: the availability of a building claim and developer’s influence on the future land use and parcellation. The building claim is one of the crucial characteristics for any land development model (Samsura et al., 2010). Potential to influence future land use emerged as the most important claim and developer’s influence on the future land use ratio within the mix-use zoning. Logically, medium influence grant a developer less and low influence minimal possibilities.

By assigning the levels to these negotiation issues we defined the possible actions (A) and the strategies (s) for player M and D consecutively. The first negotiation issue: building claim has two levels: available (BC) or not available (NBC). These levels are straightforward and we did not provide any additional elaboration. Contrary, the influence on future land-use and parcellation can be perceived arbitrary therefore a further elaboration is necessary. We determined three levels for this issue: High (H), Medium (M), and Low (L) influence. High influence means that developer can carry out any land use regulated by mix-use zoning plan and completely determine the size and the shape of any parcel in the land that will be redeveloped. To underline, changing a zoning plan is not an option, but the levels of developer’s influence (H, M, L) express the potential to adjust the land use ratio within the mix-use zoning plan.

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Perspectives of Game Theory
As decision processes in real estate development projects become more complex, we have to find theories that can support the governance of such processes through interventions. Game theory can be applied to real estate development project environments, resulting in a very basic understanding of players' choice behavior and expected decision outcomes, together with recommendations concerning the application of intervention strategies in conflict situations. However, one should realize that game theory presents an abstraction from reality: not all intricacies of real-life interaction processes in real estate development projects are covered, and deliberately so. The aim is to use the abstract representation of the interaction structure as a tool to understand the behavior of the involved parties a bit better, not to mimic real-life to every detail. Furthermore, a major critic of the classical game theory is the assumption of completely rational players with complete information. To partly overcome the problems related to the assumptions of game theory, the concept of bounded rationality can be introduced. This can be achieved by combining game theory with methods that enable the possibility of having a 'vector' or 'multi-valued' utility function. This is a main subject in the research of the authors, of which the first results can be found in Glumac (2010b) and Blokhuis (2010).

References


Emerging urban futures and opportune repertoires of individual adaptation

This paper summarizes the goals and scope of a new large scale research project, funded by the EEC. The ultimate goal of this research project is to develop the first comprehensive model of dynamic activity-travel patterns in the world, expanding and integrating concepts and partial approaches that have been suggested over the last few years. Dynamics pertain to different time horizons. Long-term decisions such as demographic change, changing job or house may also prompt or force people to adapt their activity-travel patterns.

Exogenously triggered change involves change in the urban and/or transportation environment and/or the larger socio-economic institutional contexts. It may be unplanned or planned (policies). The integrated multi-agent model will simulate the primary, secondary and higher order effects of such emerging urban futures on dynamic repertoires of activity-travel patterns. A multi-agent model will be built to capture these dynamics. In addition to the multi-agent model, the PhD/postdoc projects will result in improved understanding of the effects of various policies, based on a variety of statistical analyses, and in guidelines about the most effective (set of) policies in contributing to integrated urban sustainability, and in elaborated theory about spatial dynamic choice behaviour.

“Activity-based models should be considered as alternatives to spatial interaction models.”

Introduction
An understanding of complex activity patterns (time-space behaviour) of actors is essential for improving the effectiveness of various kinds of policies and for assessing the market potential of new real estate projects. An activity-based framework constitutes an integrated framework as it (i) combines economic, social and other activities; (ii) is based on a highly detailed, comprehensive spatial and temporal representations (minutes and geocodes/small postal zones), (iii) combines different methods to simulate behaviour, (iv) focuses on the complex interdependencies between activities, household members, time periods, locations, etc., and (v) constitutes the basis for deriving measures of economic, social and environmental impact and feasibility. For these reasons, the activity-based perspective has rapidly gained momentum, especially
in transportation research, but also urban planning, and to a lesser extent in sociology (new mobilities and time use research). To the extent that real estate is addressing similar problems as urban planning, activity-based models should be considered as alternatives to spatial interaction models, which nowadays seem the standard. There is evidence that these models, which have represented the state-of-practice for decades, are slowly being replaced in planning practice by activity-based models, such as Vovsha et al. (2004), CEMDEP (Bhat et al., 2004), Famos/PCATS (Pendyala et al., 2005), and Tasha (Roorda, et al., 2007). Arentze & Timmermans (2000, 2005) developed Albatrix for the Dutch Ministry of Transport. All these models are concerned with the simulation of daily activity patterns and have dealt only marginally, if at all, with dynamics. This is mainly due to two reasons: (i) the lack of any sufficiently large continuous data set of long duration, and (ii) until very recently, the lack of useful theories and integrative, comprehensive modelling approaches. Available data relate to one or two day observed activity-travel diaries, and hence do not allow any advanced dynamic analysis and modelling. The main objective of the research project therefore is to analyze and model endogenously and exogenously triggered dynamics in activity-travel patterns, across different time horizons in the context of particular future urban challenges that to date have received only scant attention.

Conceptual framework

The general framework, underlying the research project is depicted in Figure 1. The problem of organising activities in time and space involves the interdependent choice of which activities to conduct (activity generation), where to conduct these activities (destination choice), when and for how long (opening hours) constraints and available resources (sequencing of activities) and institutional (e.g. opening hours) constraints and available resources (income, cars and other modes of transport). It is a spatial problem in the sense that attributes of the environment, including the transportation system, influence the decision making process. However, this influence is indirect in the way that individuals base their choices on the incomplete and imperfect information they have about their environment (their cognitive environment). Some attributes are relatively stable, others vary and yet different ones emerge as the result of the accumulated decisions of many individuals. It makes the decision context inherently uncertain.

Adaptation of activity-travel patterns does not only come about due to endogenous factors (changing needs, learning, etc.) but also because exogenous factors (changing supply, policies) trigger or force people to rethink the way they have organised their activities in time and space. People will first try easy short-run rescheduling, but if that is ineffective, they will consider midterm or even long-term decisions.

“Needs are dynamic and influenced by lifecycle stages.”

Research questions and methods

Based on this conceptual framework, the research programme will address a series of linked research questions, necessary to develop a multi-agent model that will simulate both emerging patterns and evolving dynamic behaviour due to exogenous change and due to endogenous change, triggered by a set of innovative policies aimed at sustainable urban futures.

Panel survey recording for two months activity-travel patterns of a representative sample of 1,500 respondents; using GPS-enabled cellular phones technology and Web based prompted recall will be conducted. We can automatically trace the space-time behaviour of individuals participating in the survey. GPS traces provide information about route, destination, timing choice and duration.

The panel will be divided into sub-samples. Respondents in every sub-sample will be invited to stated choice/adaptation experiments. More complex and advanced travel simulation experiments will also be required for the projects where data about learning is necessary and in case individual respondents are required to respond to emerging aggregate patterns. These patterns or the collected effect of other travellers will be based on computer simulations.

Qualitative data (protocols, decision tables, laddering techniques, CNE etc.) will be used to collect data about the reasoning behind responses and serve for triangulation.

Individual projects

The program consists of five PhD projects and a postdoc project for the integration of the PhD projects. PhD projects address a specific dimension that is assumed to influence the dynamics of activity-travel preferences, however considering interdependencies with other dimensions. Project 1 will examine the effects of future urban form on dynamic repertoires of activity-travel behaviour. Project 2 will examine the effects of pricing strategies, while project 3 will explore the effects of increasing energy prices. Project 4 will be concerned with the effects of social networks, while project 5 will investigate of ICT.

Conclusions

This paper has briefly described the motivation, scope and project description of the U4IA research project. Although undoubtedly various operationalizations will require much further thought, it seems that most key theoretical concepts, research methods, modelling principles and data challenges have been sufficiently explored to combine these into an integrated multi-agent model. The model will allow one to simulate space-time behavior of individuals and households and how this changes over different time horizons. These behavioral patterns can serve as input to several performance indicators in a variety of application domains. Assessing the feasibility of new real estate projects as a function of their use is an obvious application.

Acknowledgements

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References


Figure 1: Overview of conceptual framework

Activities are conducted to satisfy underlying needs and desires. Needs are dynamic and influenced by lifecycle stages. Also the resources change dynamically as a result of lifecycle. It leads to activity agendas that change slowly over time, primarily due to key lifecycle events. Some needs are personal, others are defined at the household level. Consequently, conducting activities may also satisfy needs of others and be beneficial to one or more underlying needs and this interdependency needs to be taken into account.

At the mid-term level, this means that individuals will face a relatively stable set of conditions, will learn until a relatively stable set of context-dependent choice heuristics can be applied to cope with the situation and develop a repertoire of effective choice strategies. Successful strategies will be reinforced. Unsuccessful strategies will no longer be applied. Because needs occur in different cycles, the organisation of activities is a multi-day decision problem, with time intervals depending on the kind of activity, the extent and nature of any substitution and variety-seeking.

In the short-run, at the start of the day, activities for that day need to be scheduled. Although the scheduling may also have occurred earlier. However, due to the inherent uncertainty at this time horizon, some activities, including travel may require more time (or less time) than anticipated, implying that activities need to be rescheduled. It means that individuals can change one or more of various choice facets of their activity schedules.

By implementing activities, individuals visit particular destinations and experience attributes, thereby reinforcing their beliefs and updating their memory trace regarding their awareness of alternative destinations in their environment. In addition to these dynamics that result in conducting activities, individuals may hear of new alternatives through word-of-mouth of members of their social network. Moreover, individuals may be passively exposed to advertisement or other information, or they may be actively searching for information. It is assumed that the acceptability of information is a function of the similarity between the people involved and the general acceptance of the alternative in the social network. Similarity is a function of person characteristics, attributes, group membership and spatial distance.

Time window

DYNAMICS

Life Trajectory Induced Activity Agendas

Multi-Day Multi-Person Task Allocation

Activity generation

Environment

Information

Social network

Life trajectory

Multi-use network

Daily Activity-Travel Rescheduling

Task allocation

Rescheduling

Process

FIGur E 1

Overview of conceptual framework

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When traveling to and/or visiting the inner city area, car drivers evaluate the characteristics of parking garages and decide which parking garage to use (e.g., CROW, 2006a). In general, the characteristics of a parking garage can be grouped into four sets: location related characteristics (vis-à-vis origin of car driver, final destination of car driver, and other parking facilities), service related characteristics (opening hours, maximum parking duration, security, etc.), price related characteristics (tariff level and structure), and design related characteristics (size of parking spaces, location of columns, lighting, paintwork, etc.). Various handbooks are available to design and manage parking garages (e.g., Louter & Van Savooyen, 2005; Rinsma & Koens, 2007). The handbooks mostly manage parking garages (e.g., cetera). Various handbooks are available to design and manage parking garages (e.g., Louter & Van Savooyen, 2005; Rinsma & Koens, 2007). The handbooks mostly consider the parking garages from an operational point of view and do not pay much attention to the car drivers’ point of view.

“Car drivers give Eindhoven parking garages highest evaluation score for distance between parking garage and final destination.”

Several studies have been carried out regarding car drivers’ evaluation of parking garages and the role of these evaluations in car drivers’ decision making process. Some of these studies have been conducted by the Urban Planning Group of Eindhoven University of Technology. For example, Van der Waerden et al. (2005) presented a study concerning shoppers’ evaluation of and use of parking garages in the city of Veldhoven and Eindhoven. The focus of that study concerned design-related characteristics such as lightning, color of paint, walking route, and presence of reference symbols. The study showed that the evaluation scores of color of painting and presence of exit ramps influence the overall evaluation score of parking garages. It also appears that the evaluation score differs significantly between frequent and infrequent users of parking garages. In a study concerning segmentation of car drivers in the context of parking garage choice behavior, Van der Waerden et al. (2006) found that car drivers consider the location of the garage in relation to the final destination as the most important parking garage characteristic. At some distance, this characteristic is followed by price and opening hours. Less relevant characteristics are signposting and services.

In addition to the previous studies, this article provides additional insight into car drivers’ evaluation of location and price related characteristics of parking garages. The article addresses the following research questions: How are different aspects of parking garages evaluated? and Are there significant differences between parking garages? The remainder of the article is organized as follows. First, the adopted research approach and the data collection will be described. This section also includes a brief description of personal characteristics of the respondents included in the sample. In section 3, the analyses and the results of the analyses are discussed. The article ends with a discussion about managerial implications and suggestions for future research.

Research approach and data

To find the answers to the two included research questions the following approach was adopted. Car drivers were asked to evaluate characteristics of the parking garage they parked their car when visiting the city of Eindhoven. In total, six different characteristics of parking garages were investigated: the number of parking spaces, the price level, the traffic safety for both cars and pedestrians, the social safety, the accessibility of the parking garage in relation to home, and the accessibility of final destinations in relation to the parking garage. For the evaluation a five-points scale was used ranging from Bad (score 1) to Good (score 5).

To get the necessary insights into the requirements of car drivers with respect to parking garage characteristics, a questionnaire was developed. The questionnaire covers three parts: (i) the car drivers’ current use of parking garages, (ii) car drivers’ evaluation of parking garage characteristics, and (iii) car drivers’ response on hypothetical parking measures. Figure 1 shows part of the questionnaire on which the analyses of this paper are based. In addition, some questions were included concerning the personal characteristics of the respondents (gender, age, home location, group size, car type, and trip purpose).

In October 2005, questionnaires were administered by students in 8 different parking garages in the city centre of Eindhoven, the Netherlands (Figure 2). Kennedy Business center (code 2), Bijenkorf (8), Mathildelaan (10), De Witte Dame (14), Heuvelgalerie (19), ’t Hooghuis (20), Stadskantoor (30), and Stadshuisplein (31). The parking garages differ in size and are exploited by different organizations: Q-park, P1, and the municipality.

The questionnaires were distributed across the parking garages in accordance with the size of the parking garage. When returning to their car, car drivers were asked to answer the questions of the questionnaire. More than 680 car drivers completed the questionnaire. The distribution of the respondents across personal characteristics is what one might expect in inner-city areas. A few more females than males participated in the study. Most respondents belong to the age group 25 to 45 years. live outside the city of Eindhoven, visit the parking garages alone, use a standard car, and visit the city center for shopping.

Analyses

In the questionnaire respondents have evaluated different characteristics of the included eight parking garages. The numbers of respondents who have evaluated the parking garages are presented in Figure 3. The

FIGURE 1
Part of the questionnaire concerning the evaluation of parking garages

Question 11: What do you think of the accessibility of this garage in relation to your home location?

Question 12: What do you think of social safety in this parking garage?

Question 13: What do you think of the accessibility of this garage in relation to your final destination in relation to this parking facility?

FIGURE 2
Location of the selected parking garages

FIGURE 3
Use of parking garages

parking garages
1 Kennedy Center
2 Bijenkorf
3 Mathildelaan
4 Witte Dame
5 Heuvelgalerie
6 ’t Hooghuis
7 Stadskantoor
8 Stadshuisplein

1
2
3
4
5
6
7
8

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
In addition, the test results show many significant differences between the different parking garages. For example, regarding capacity it appears that the mean evaluation scores between parking garage 2 and 10 differ significantly. The difference in mean score is equal to -0.570, indicating that parking garage 2 is higher evaluated than garage 10. Overall, the figures show that parking garages differ mostly in mean evaluation in the case of capacity, and less in the case of distance between parking garage and final destination. In more detail, it appears that parking 10 scores very well in relation to other parking garages in the case of capacity, and parking garage 8 scores poor in the case of prize level.

Conclusions
Parking facilities in general and parking garages in particular have become interesting objects in the urban real estate market (CROW 2006b). Together with good accessibility, the availability of good parking facilities play an important role in the quality of a location which has a great influence on the value of buildings such as houses, shops, and offices. For example, parking facilities contribute for 24 percent in the rental value of offices. Parking facilities not only influence the value of property but also represent a certain value by itself by generating money and through the life cycle they go through. The described position of parking facilities requires a continuous monitoring of the quality of the parking facility in relation to the users of the facilities. This article describes a study concerning car drivers’ evaluation of parking garages. Special attention is paid to location and price related parking garage characteristics. Both groups of characteristics include important management tools for operators of parking garages when looking to the customers and the value of their garages. Previous studies (e.g., Van der Waerden et al. 2006; CROW 2006a) show that parking tariffs and parking locations have a strong influence on car drivers’ parking choice behavior. Car drivers visiting different parking garages in the city of Eindhoven are asked to evaluate 6 different characteristics. The study shows that car drivers give the highest evaluation score to the distance between parking garage and final destination, and the lowest evaluation score to the price level of the parking garages. It also appears that for almost all investigated characteristics differences in mean evaluation scores exists between individual parking garages. Operators of parking garages can use this information to start initiatives to improve the evaluation scores of their parking garage(s) and, in addition, improve the competitive position of the garages and its environment.

In the next step of the analysis, the differences in evaluation scores between the included parking garages are investigated in more detail. The differences are investigated using Analysis of Variance (ANOVA) with the multiple comparison test Bonferroni. ANOVA tests if there are differences in means over all parking garages and does not provide pair wise information. The ANOVA test uses the F-statistic to decide if the difference in means is statistically significant (at conventional level: F-statistic > 1.96). Bonferroni test also uses the F-statistic and analyzes the differences in means for each pair of parking garages.

“Insights into car drivers’ evaluation of parking garage characteristics are important for managing parking garages.”

The results of the tests for each characteristic are presented in Table 3. The F-statistics show that the mean evaluations of the parking garages differ significantly for almost all parking garage characteristics except social safety.

TABLE 1
Test results of average evaluation scores per parking garage (significant only)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Parking garage</th>
<th>Parking garage</th>
<th>Mean difference (i-j)</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>2</td>
<td>10</td>
<td>-0.570</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>(F-statistic = 16.98)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>20</td>
<td>0.850</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>14</td>
<td>0.399</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>16</td>
<td>0.665</td>
<td>0.007</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>14</td>
<td>1.420</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>14</td>
<td>0.895</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>14</td>
<td>0.669</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>20</td>
<td>1.021</td>
<td>0.000</td>
</tr>
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<td></td>
<td>19</td>
<td>20</td>
<td>0.955</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>30</td>
<td>-0.725</td>
<td>0.004</td>
</tr>
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<td></td>
<td>31</td>
<td>30</td>
<td>-0.751</td>
<td>0.000</td>
</tr>
<tr>
<td>Prize level</td>
<td>2</td>
<td>19</td>
<td>0.781</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(F-statistic = 9.62)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>19</td>
<td>0.439</td>
<td>0.035</td>
</tr>
<tr>
<td></td>
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<td>19</td>
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<td>30</td>
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<td></td>
<td>14</td>
<td>19</td>
<td>0.782</td>
<td>0.000</td>
</tr>
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<td></td>
<td>20</td>
<td>14</td>
<td>-0.798</td>
<td>0.001</td>
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<td></td>
<td>19</td>
<td>20</td>
<td>-1.264</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>19</td>
<td>-1.089</td>
<td>0.000</td>
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<tr>
<td></td>
<td>20</td>
<td>31</td>
<td>0.883</td>
<td>0.000</td>
</tr>
<tr>
<td>Traffic safety</td>
<td>10</td>
<td>20</td>
<td>0.521</td>
<td>0.044</td>
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<tr>
<td></td>
<td>(F-statistic = 3.98)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>0.502</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>31</td>
<td>0.488</td>
<td>0.044</td>
</tr>
<tr>
<td>Social safety</td>
<td>10</td>
<td>20</td>
<td>-0.435</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>(F-statistic = 5.82)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>31</td>
<td>-0.628</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>10</td>
<td>-0.467</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>10</td>
<td>-0.401</td>
<td>0.032</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>14</td>
<td>-0.399</td>
<td>0.038</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>19</td>
<td>0.503</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>18</td>
<td>0.496</td>
<td>0.005</td>
</tr>
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References


Many studies on real estate risk focus on the classical items of real estate risk: market risk, financial risk and idiosyncratic risk. The recent crisis however showed that managing these risks has not prevented investors from losses on their real estate investments. This leads to the question what in recent years has defined the delta between a good and a bad project.

Review of some ‘bad projects’ has revealed that often there was something wrong with the basic characteristics of the investment (e.g. location, design, routing, functionality etcetera), key performance indicators of the investment proposal or with revisions in the development process of an investment. Not financial and idiosyncratic risks caused losses, in many cases losses resulted from operational risks.

What is operational risk?
In the better years for the real estate sector the main focus was on the risk-return profile of the portfolio, which mainly concerned market, idiosyncratic and financial risk. Operational risk was not or only limitedly on the agenda of the management. As the matter of fact, operational risk has been a rather underestimated risk in the real estate sector. Now, research has revealed that failures in operational risk management can have a major impact on the performance of real estate portfolios. As a result, operational risk management is gaining importance, however many companies have difficulties in making it operational in their organizations.

Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes and controls, people and systems, or from external events. Business and regulatory environments have become increasingly complex, raising corporate risk profiles. Operational risk governance processes are established on a firmwide basis to identify, measure, monitor, and control operational risk in a manner comparable with the treatment of credit, interest rate, and market risks. Institutions are expected to develop a framework that measures and quantifies operational risks for regulatory capital purposes.

The definition of operational risk incorporates the risks stemming from people, processes, systems, and external events. People risk refers to the risk of operational failure, organizational structure, or other human resource failures. These risks may be exacerbated by poor training, inadequate controls, poor staffing resources, or other factors. System risk covers instances of both disruption and outright system failures in both internal and outsourced operations. Finally, external events can include natural disasters, terrorism, and vandalism. Process risk is the risk that the firm’s business processes.

The real estate sector is averse to regulation and feels easily restricted by those rules. Moreover the sector occasionally suffers from overestimation when it comes to their performance and management. Research (Izebout et al, 2010) has shown that many companies grade themselves with a seven or eight on their risk management function. Upon closer investigation they seldom score better than a poor five. The regulator now forces real estate companies to review and improve their risk management policies.

“The real estate sector is averse to regulation and feels easily restricted by those rules.”

As a result of new regulation, real estate companies now have to create a risk management function that is independent of the core business. Risk management in an investment business is by definition separated from areas of the firm responsible for making investment. This separation provides risk managers with independence to monitor investment decision making. This does not mean that there is no cooperation at all: risk management is an ongoing process that requires risk managers to work closely and cooperatively with investment professionals on a day-to-day basis. The big difference between risk managers and the investment professionals is their independence and narrow focus on risk.

The key activities of the risk management function in real estate companies are largely similar to the activities in other financial firms:
• Identifying material sources of risk;
• Measuring and monitoring those risks;
• Devising approaches to control, mitigate and/or hedge those risks.
A well-designed enterprise risk system provides information that allows management to understand whether key strategic objectives are being met and to identify opportunities to adjust strategies and tactics to take advantage of shifts in the environment that might be exploited for the benefit of the organization and its stakeholders. This operational risk methodology contains the processes for the identification, assessment, control and monitoring of operational risk.

- Risk self assessment (RSA) - identify the key risks that pose a threat to achieving the predefined business objectives and assess the effectiveness of controls used by management to mitigate those risks
- Key risk indicator (KRI) - Indicators are used to help warn management of changes in previously identified key risk. KRI’s serve as a monitoring function for the business

“Operational risk has been a rather underestimated risk in the real estate sector.”

An effective method for developing KRI’s begins by analyzing a risk event that has affected the organization in the past (or present) and then working backwards to pinpoint intermediate and root cause event that led to the ultimate loss or lost opportunity. The goal is to develop key risk indicators that provide valuable leading indications that risks may be emerging. The closer the KRI’s is to the ultimate root cause of the risk event, the more likely the KRI will provide management time to proactively take action to respond to the risk event. (Beasley et al, 2010)

Loss event database (LED) - A record of events (failure and near failure) that have affected the business. Actual loss events are to be used to enhance the ongoing risk monitoring process
- Scenario analyses (SA) - Assessment of operational risks that pose a threat to the business. Scenarios are also used to stress test the business against operational losses and as an input to the calculation of operational risk capital.

Real estate sector needs a revised focus on risk management

The real estate sector has focused too much on financial risk in the past and in many cases ignored operational risk. The crisis has shown that financial risk is not the only risk to manage. Dealing with market risk and being in control of the operational risk are key success factors for a real estate organization. Although the new regulation for many real estate professionals feels like an extra burden in their daily business, one can see the opportunities as well. Effective risk management can result in lower margin of error, more insight and control and consequently higher revenues. Being ‘best practice’ offers opportunities, because it gives companies a head start in attracting capital from the market.

References

Beasley, M. S., Branson, B. C., Hancock, B. V. (2010) Developing key risk indicators to strengthen enterprise risk management. COSO, December 2010
Overlooking the corporate strategies within the hospitality industry over the past decade, it is clearly noticeable that major hotel companies (e.g. Accor, Marriott, InterContinental, Hilton) have transformed from a ‘asset-heavy’ towards an ‘asset-light’ approach to remain competitive. The split between hotel real estate ownership and hotel operation has been an efficient way to lighten the balance sheet and to unlock capital to finance corporate growth. Hotel companies have been aware that higher returns on their capital can be achieved by expanding their core business activities. At the same time investors recognize hotels as an interesting asset class and they are developing an increasing understanding of the hotel operation including the selection of operators and brands.

The involvement of an investor in a hotel property and in the business that is situated in the property, generally exceeds the involvement of investors in more traditional real estate classes. An investor in an office or retail property doesn’t usually have any involvement with the business of its tenant, other than a lease contract. In the hotel industry, the investor may choose to buy just the building or the building together with the hotel operation that is conducted in it.

There is a wide variety of contracts on the basis of which hotels can be operated, varying from straightforward leases to management contracts or agreements combining elements of both operational possibilities. Observing the investment preferences of institutional investors, the fixed income of a lease contract suggests to be the favorable option for a property owner. However, is this really the case?

“Knowledge of the hotel business is a key requirement to structure a feasible investment.”

Uncontrollable market conditions may force investors not being able to choose between a lease or management contract. Due to difficult market circumstances as a result of the financial crisis during the past years, several hotel companies have been struggling to meet their financial obligations. For instance, mid-2009 European Hospitality Properties (EHP) acquired the operation of its owned hotels after bankruptcy of its tenant, Golden Tulip Hotels. The founders of EHP established a management company Full House Hospitality Management, responsible for the day-to-day management of the hotels. Although several management companies showed interest in taking over the operation of the EHP hotels, the offered leases would have resulted in a significant decrease in rental income and value of the properties. Nearly two years after the operational takeover, the Golden Tulip hotels of EHP are well on track to outperform their original leases and to create significant value increase, especially if markets further improve.

Sale and leaseback

Sale and leaseback is a practical and widely used corporate strategy tool. Properties are sold and the capital is recycled back into the business and can be used for refurbishment of retained assets, acquisition and development activity in new markets and brands, or it can be returned to shareholders. Within the hospitality industry sale and leaseback usually involves long-term lease contracts as hotel companies do not want to lose their important asset in a specific market. With a lease contract the operator remains in day-to-day operational control of the hotel business. There are no operational responsibilities for the owner. Consequently, the owner is placed in a passive role and has no operational control. The burden of the operational risk lies with the hotel operator.

Lease contracts are often favored by banks and institutional investors because the financial risks seem to be minimized by the fixed rental income. Although it is often overlooked, the biggest risk for the owner and lender is a dropping profitability of the hotel operation, because of which the operator might not be able to meet its rental obligations. Consequently, this could result in a downward adjustment of the rental price in order to avoid bankruptcy. Additionally, due to the fixed rent the property owner will not benefit if the hotel operation is successful.

“Knowledge of the hotel business is a key requirement to structure a feasible investment.”

Sale and manageback

While the sale and leaseback is a common corporate strategy tool in the real estate business, the sale and manageback is a less familiar approach, especially in Europe. Major hotel companies have been disposing their assets as a result of the ‘asset-light’ strategies and they are becoming hotel management companies rather than owners of the real estate and the operational risk.

A hotel management contract can be defined as an agreement whereby a hotel owner contracts with a separate management company to run the operation of the hotel. The investor owns the real estate and the hotel business, maintaining full property rights. The investor is entitled to the whole operation, legally and financially, and directly employs the hotel staff. The investor therefore bears all risks but enjoys all profit from the operation as well. All the profit of the hotel business belongs to the owner who pays remuneration to the management company.

The management company runs the hotel for a fee according to specific terms negotiated with the owner. This remuneration generally consists of a base fee which is based on a percentage of the total revenue, typically a percentage ranging from two to four percent. Often the management company receives an incentive fee in addition to the base fee, commonly a percentage of eight to ten percent of Gross Operating Profit (total revenue minus cost of goods sold). However, it is becoming more and more common these days that both management companies and investors accept lower base fees in return of higher incentive fees or scaled incentive fees.

A management agreement generally aims to maximize the return on capital employed for both the management company and the owner and places the operational risk of profit and loss on the owner. The performance of the operation, as well as the quality of the management company and market circumstances, directly affects the value of the asset in a positive or negative way.

The key to a successful management contract is to create a win-win situation for all parties involved. The interest of the owner and the operator with a successful operation of the hotel are aligned; the management company wants an assurance of the continuation of the hotel operation while the owner seeks for a reasonable guarantee of cash flow.

Knowledge of the hotel business is a key requirement

In general, the legally protected relationship between investor and hotel company using a lease or management agreement largely determines the balance of risk between the investor and hotel company. It is becoming more and more common to merge the basic principles of the two models to see both the owner and the operator sharing the operational risk.

Comparing the financial benefits to the investor under a lease with those under a management contract, it becomes apparent that the potential upside profit is limited with a straightforward lease, while there is a serious downside risk.

These risks can be mitigated by using leases including turnover rents that reduce if business drops and increase equivalent to the operational success. This variation on the fixed lease is the so-called hybrid lease, and can be structured with or without a minimum base rent to secure cost of capital.

Applying for a structure based upon the principles of a management contract – weather including a guaranteed or priority owner’s return – automatically shifts the balance of risk towards the owner. Nevertheless potential upside is in place, especially if market circumstances provide a window of opportunity to have a well performing business. Risk mitigation can be realized by contracting major management companies. These international management companies provide worldwide customer recognition, have very good sales capabilities, tend to be able to operate efficiently and have relatively low service costs.

“After reaching its lowest level in the past decade, the Dutch hotel market seems to recover slowly.”

Regardless the legal structure, well structured hotel investment creates value and brings benefits to all stakeholders involved in a transaction: real estate owners, hotel operators and lenders. The hotel business is a cyclical business, but with a structural growth component. However, knowledge of the hotel business is a key requirement to create a feasible investment.
The Revenue Per available Room (RevPAR) is one of the most important ratios in the hotel industry to measure the financial performance of a hotel. RevPAR is a function of both room rate and occupancy. Figure 1 illustrates RevPAR growth for the Netherlands during the period 2000-2010. After several years of growth, the unfavorable economic conditions caused Revenue Per Available Room (RevPAR) to drop in 2003, hitting its lowest point since years in 2004. The years after the economic pickup resulted in a strong increase of RevPAR. The Dutch hotel market was hit hard by the economical downturn in 2007 and results were dropping significant the years after. After reaching its lowest level in the past decade, the Dutch hotel market seems to recover slowly.

A theoretical approach is used to illustrate the different levels of financial risks involved using both a straightforward lease contract (property owner versus operator) and a management contract (hotel owner versus management company) for a hotel investment in the Netherlands. Based on benchmark figures and market standards of the Dutch hotel market, both earning models are compared for a typical hotel with 150 rooms during the period 2000-2010.

Leasing or managing, a theoretical approach based on The Netherlands

The Dutch hotel market

The Dutch hotel market is strongly more volatile. However most of the business risk is placed onto the property owner, the total income is significantly higher compared to the lease, even while 2009 and 2010 were difficult years for the hotel business. The stable income pattern for the management company reflects their shifting into "asset-light" strategies and becoming management companies rather than owners of the premises and the operational risk.
How do things stand?

On 15 December 2009 the European Commission issued a Decision on State Aid for Housing Corporations. In this decision the Commission ruled that public purpose buildings (schools, village halls and community centres for example) shall be subject to normal European tendering procedures. This means that housing corporations have become obliged to put out for tender investments in public purpose buildings that exceed the European Union procurement threshold of € 4,845,000 excluding VAT (Value Added Tax). According to the government this does not apply to the hiring of related services (the deployment of neighbourhood monitors for example).

Following the European Commission decision of 15 December 2009 housing corporations are again faced with the issue regarding procurement obligations. However, the question is rather why there is any uncertainty about this issue. This can be answered by examining the criteria applicable to contracting authorities and in particular to bodies governed by public law.

Criteria

The question of whether a body is a contracting authority must be assessed against the criteria established for “contracting authorities” and in particular for “bodies governed by public law” in the Public Procurement (Tendering Rules) Decree.

An organisation can be regarded as a body governed by public law if:

- It has been established for the specific purpose of meeting needs in the public interest rather than those of an industrial or commercial nature;
- The body has legal personality;
- (i) Its activities are mainly funded by another contracting authority, or (ii) its management is subject to the supervision of another contracting authority, or (iii) over half the members of its management board or regulatory authority have been appointed by another contracting authority.

“To assess whether supervision is carried out (only retrospective supervision being considered not to qualify) one has to look to the relevant provisions of the Housing Act (sections 70d and 70e) and the Subsidised Rented Sector (Management) Decree (articles 42 and 43). From these provisions it follows that housing corporations come under ministerial supervision, and that in the interests of public housing the Minister of Housing, Spatial Planning and the Environment can instruct a housing corporation (in advance) to perform or omit one or more acts. The minister can also indicate that prior approval is needed for certain acts and can appoint a person or body to draw up a plan listing acts to be performed by a housing corporation. If a housing corporation seriously harms the interests of public housing, the Minister can request a court to place a housing corporation in administration. On this basis we can conclude that supervision can be exercised in advance, thus ensuring that housing corporations satisfy the criteria applicable to bodies governed by public law.

In practice, ministers rarely use their powers to exercise advance supervision over housing corporations. It is true to say that supervision is often exercised in retrospect, and that ministers only use their power to issue instructions following specific incidents. It can thus be argued that housing corporations are not essentially subject to any controls in awarding public supply contracts and that the criterion of supervision is therefore not met.

The conclusion from the above is that Minister of Housing, Spatial Planning and the Environment is able to exercise advance supervision over housing corporations. That is being the case; housing corporations could be regarded as bodies governed by public law and therefore as contracting authorities. However, events in practice give rise to the argument that housing corporations are not in fact subject to advance supervision and controls in awarding public supply contracts. It is therefore time for a court decision. be answered by examining the criteria applicable to contracting authorities and in particular to bodies governed by public law.

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“The European Commission ruled that public purpose buildings shall be subject to normal European tendering procedures.”

To be regarded as a body governed by public law the above three cumulative criteria must be fulfilled, the third criterion consisting of three alternative criteria (i), (ii) and (iii).

It may be assumed that housing corporations fulfil the first two cumulative criteria, as this follows from section 70 of the Housing Act. Housing corporations are established for the specific purpose of operating in the area of housing, and only associations with full legal capacity and civil-law foundations can be admitted. The legal personality of such entities is laid down by section 2:3 of the Dutch Civil Code.

The prevailing view about alternative criteria (i) and (iii) is that housing corporations do not satisfy them. I therefore leave them aside. But there is also the question of whether housing corporations satisfy alternative criterion (ii).

To assess whether supervision is carried out (only retrospective supervision being considered not to qualify) one has to look to the relevant provisions of the Housing Act (sections 70d and 70e) and the Subsidised Rented Sector (Management) Decree (articles 42 and 43). From these provisions it follows that housing corporations come under ministerial supervision, and that in the interests of public housing the Minister of Housing, Spatial Planning and the Environment can instruct a housing corporation (in advance) to perform or omit one or more acts. The minister can also indicate that prior approval is needed for certain acts and can appoint a person or body to draw up a plan listing acts to be performed by a housing corporation. If a housing corporation seriously harms the interests of public housing, the Minister can request a court to place a housing corporation in administration. On this basis we can conclude that supervision can be exercised in advance, thus ensuring that housing corporations satisfy the criteria applicable to bodies governed by public law.

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Singapore is the logistic transit hub for Southeast Asia, and currently, as one of the four Asian Dragons, Singapore experienced a consistently high economic growth since the sixties of last century. Over the past twenty years, the average increase of the gross domestic product (GDP) of Singapore was 7.58% per year. (TradingEconomics, 2010) Economic growth since the sixties of last century. Over the past twenty years, the average increase of the gross domestic product (GDP) of Singapore was 7.58% per year. (TradingEconomics, 2010)

With a surface area of 697 square kilometers (half of the surface area of the province Utrecht), Singapore is the smallest country in Southeast Asia. At the moment, it has a population of 5.8 million people. This gives Singapore an extremely high population density. (Singapore Department of Statistics, 2010)

The government wants to make sure that the composition of every HDB-flat is a reflection of the total population. The urban population is divided into many small groups, and the composition of the various races is being considered when purchasing a HDB-flat. (The HDB: a housing revolution, 2006)

As the destination was chosen, the travel committee started composing a varied program for the trip. Of course the students should be acquainted with the culture of the country and city, but the educational character of the trip was especially important. For this reason, four case studies were composed. Three of them focused on the real estate market in Singapore, in particular the office, logistic and residential real estate market. The last case study was a ‘question & answer’ with Jim Rogers. The case studies fit the convergent nature of the trip. The week would start with a general impression of the property market of Singapore, during the middle of the week the focus would shift towards the case studies and at the end of the week key projects would be visited. This provides a clear structure of information and therefore enhances the learning process for the students. Eventually, we, as a travel committee, believe we have constructed a very interesting and high quality program, which we are very proud of.

Activities of SERVICEx

The destination
Every year study association SERVICx organizes an interesting study trip abroad. Recent years cities like New York, Toronto, Hong Kong and Seoul were visited and this year the travel committee managed to find another interesting destination. The current situation in the Netherlands helped to determine a destination, since the city should provide insight into the differences or similarities with various characteristics of the Netherlands. A high population density, the presence of a logistic transit hub for Europe (Rotterdam’s harbor), stimulation of the knowledge economy, recent departure of highly educated young people, influences of the recession of the economy and an ageing population characterize the Netherlands nowadays. For students it is very interesting to see how these developments are handled abroad. Because of the following reasons, Singapore was chosen as the most interesting destination:

• With a surface area of 697 square kilometers (half of the surface area of the province Utrecht), Singapore is the smallest country in Southeast Asia. At the moment, it has a population of 5.8 million people. This gives Singapore an extremely high population density. (Singapore Department of Statistics, 2010)

• As one of four Asian Dragons, Singapore experienced a consistently high economic growth since the sixties of last century. Over the past twenty years, the average increase of the gross domestic product (GDP) of Singapore was 7.58% per year. (TradingEconomics, 2010)

• Singapore is the logistic transit hub for Southeast Asia, and currently owns the second largest harbor in the world with a total transfer in 2010 of 28.4 million containers. It only trails Shanghai which has a total transfer of 29.9 million containers. (DTZ Singapore, 2012)

• Singapore is known for his highly developed educational system that has led to an extensive knowledge economy and a growing number of high educated people moving to Singapore. The National University of Singapore is number 31 on the list of best universities in the world. (World University Rankings, 2010)

• Lastly, Singapore is a top location for businesses to settle in Asia. At the moment, the Central Business District (CBD) consist of 325,000 square meters of ‘Grade A’ office space, which will be increased with 678,000 square meters of ‘Grade A’ office space between 2010 and 2012, resulting in tripling of the total ‘Grade A’ office space in the CBD. (Jones Lang LaSalle, 2010)

Focus of the travel committee
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This has had its effect on the real estate in Singapore. The Urban Redevelopment Authority (URA), which we visited the next day, is the urban planning authority in Singapore. Since almost all the land in Singapore is property of the government and given out with a 99 year lease contract, the URA plays a big role in the current mapping of the city. We visited the URA gallery, which gave us a good insight in the development of Singapore as a ‘liveable city’. The limited space is planned with much care with a focus on mixed use developments, green areas (on the ground as well as sky gardens) and proper transportation.

Afterwards we visited the Housing Development Board (HDB). This institution was founded by Prime Minister Lee Kuan Yew, and provides housing to the majority of the population of Singapore. Only the middle-class and high-class residents live in commercial condominiums. 96 percent of the condominiums of the HDB are owned by its residents, so very less people live in rented condominiums. The government provides their inhabitants with affordable housing. The condominiums are reasonable priced and the inhabitants save twenty percent of their income monthly in a fund which is managed by the government. This fund is an obliged saving system which makes it easier for people to buy their own property since they are only allowed to use the fund to buy property. Another remarkable fact is that for every HDB-flat there is a ratio concerning the partition of different races in every flat.

The current success of Singapore was masterminded by former prime minister Lee Kuan Yew, who fought for the independence of Singapore from Malaysia and whose party lead (and still lead) Singapore from 1959 to 1990. His policy in these thirty years had three major concerns: national security, the economy, and social issues.
On Tuesday we visited KeppelLand, one of the three largest Singaporean commercial developers. In a presentation we learned about KeppelLand and the fact that it is part of an enormous firm named Keppel Corporation with different sections in Offshore & Marine, Infrastructure, Property and Investment. After the presentation we visited the Ocean Financial Centre, which was completed in March 2011. This is a sustainable redevelopment in the heart of the CBD, where two old office buildings were demolished and on the site one new office is developed. The building had many green features like solar panels, a paper recycling system, a water collection system, a green wall and a roof that is almost entirely (4.5%) covered with green. In the afternoon we went to Keppel Bay, a bay where the land is owned by Keppel Corporation. This is due to the history of the company that goes back to the British colonial time, when Keppel Corporation already existed. Here we had a tour at ‘Reflections’, an enormous housing project for the middle-class and high-class. Especially the architecture of the towers was impressing, and models of the surrounding development were watched in awe. In the evening we had an appointment with the Dutch ambassador. In a ‘Question and Answer’ the differences and similarities of Singapore with the Netherlands were clarified.

On Wednesday, a visit to the National University of Singapore was planned. We started with a lecture of Dr. Lim Lan Yuan about the real estate market of Singapore. After a tour around the campus we had a ‘Question and Answer’ with Jim Rogers. In couples, eight students prepared four different hypotheses in the interest field of Jim Rogers, a colorful American investor and an outspoken proponent of the free market. We were very glad we had the opportunity to arrange an appointment with him, and the students could enjoy themselves by making challenging hypotheses on for example commodities, the difference between China and Europe, the gold-standard and totalitarian states like Singapore. They challenged Jim Rogers to make interesting statements, which gave enough information for the students to analyze their hypotheses. This ‘Question and Answer’ with Jim Rogers provided the input for the study cases of these eight students.

On Thursday we had an ‘international consultancy day’ where we visited DTZ, ING and Cushman & Wakefield, which provided the input for respectively the logistic, residential and office study case. It was interesting to see these different companies and their offices. Also the knowledge which was shared was very helpful for our study cases. On Thursday night we met the ambassador (and eight hundred other Dutchmen) again because we were going to celebrate the birth day of our queen, and the Dutch Embassy organized a celebration. Formally dressed people, good music, Dutch delicacies like ‘bitterballen’, ‘haring’, ‘poffertjes’ and ‘stroopwafels’, and Heineken beer made clear we were at a typical Dutch Queens day celebration. We met many Dutch people living in Singapore and it was very interesting to get to know their view on the differences and similarities of Singapore and the Netherlands.

During our last formal day we visited Philips Singapore. Philips was originally founded in Eindhoven, so we were very interested why Philips was located in Singapore. It turned out that Philips was established in Singapore since 1951 due to Singapore’s strategic location. With the independence of Singapore and the growing educational level of the population the establishment developed into the central headquarters in Southeast Asia. In the afternoon we had a tour at Marina Bay Sands, an island by land reclamation for recreational purposes. It has its own casino (the second of Singapore, after Marina Bay Sands), Universal Studios movie theme park, beach and beach clubs. During the formal week we were also busy exploring the nightlife of Singapore. We went to Clarke Quay – an area near the CBD where many clubs and restaurants are located – where we had dinner and went clubbing. We also visited St. James Powerstation, an old industrial building redeveloped in five different clubs integrated in one building. And on Saturday night we partied in the Zouk, ranked 9th in the top 100 clubs of the world in 2011. Besides the nightlife of Singapore we also introduced the students with the culture of Singapore. The different Buddhist and Hindu temples, Christian churches and Islamic mosques gave a good view of the diversity of Singapore’s population. Other cultural activities during this weekend were a visit to the National Museum of Singapore, located in an outstanding preserved British colonial building, and a visit to a horse racing stadium. This was a completely new experience for us, and we were baffled by the enormous number of people gambling and encouraging their favorite horse. Furthermore, we visited the Singapore Night Safari on Friday night, the only Night Safari in the world. After accepting the fact of mosquitoes would be biting us, we were able to see a lot of different animals in the night. This was very intriguing since that’s the time of the day these animals are the most active! And even on our day of departure, we had a tour at the Marina Barrage area. This side of the Marina bay is currently in development in order to become a ‘city garden’, very similar to the Central Park in New York. Since the Marina Barrage is a dam, us Dutchmen had to take a look as experts in ‘water engineering’.

In conclusion

What we learn from this study trip: Singapore is a fantastic city. From our field of interest it was an overwhelming experience because of the tremendous pace buildings are developed in Singapore. A pace we in the Netherlands only can dream of! Enormous construction projects where only the sky is the limit are realized, without losing sight of the financial feasibility and social engagement. Not even to mention the cultural diversity of the country with many different races and religions. Add to this the great mentality, helpfulness and friendliness of the people and it seems clear that our visit to Singapore was a memorable one.

We want to thank all our sponsors for their contribution to our study trip, because without them it was not possible to organize the study trip. Especially we would like to thank the Universiteitsfonds Eindhoven (UFE), their contribution was crucial and has contributed to the high quality of the study trip. Of course I want to thank all students for their enthusiasm and commitment during the trip. In particular the contribution of our professors – Mrs. van de Ven and Mrs. Nelissen – was very pleasant. During the study trip I’ve seen a group that was very studious and due to both formal and informal activities got closer as the week passed. Lastly, I would like to announce a word of thanks towards my committee. I truly appreciate their boundless enthusiasm and dedication. As a committee we should be very proud of this team effort and the success of our organized study trip. Thanks for this wonderful time and the pleasant cooperation!
One year at work

To graduate in two, at first sight totally different, studies – ‘Psychology’ and ‘Real Estate Management and Development’ – and then find a job in which both fields are combined seems a difficult task, but it is possible! When this is your ambition you will end up like me, doing research concerning users and the built environment, in which the concepts of users and the built environment are both examined in the broadest sense of the word.

Psychology and Real Estate Management and Development

Compared to most other students I followed a somewhat different path. In 1999 I started studying psychology at the Catholic University of Nijmegen (now called the Radboud University). According to plan I graduated four years later. I was 22 years old at that moment and in my opinion I was far too young to carry all responsibilities of a psychologist. Becoming a researcher crossed my mind once in a while but I was longing for something concrete and creative as well. And after many years my old dream to become an architect was still there. Nothing ventured, nothing gained, so I signed up at the Eindhoven University of Technology for a second study: ‘Architecture, Building and Planning’.

Like most students who start this study I thought I wanted to be an architect. Therefore I decided to follow the bachelor track ‘Urban Design and Architecture’. After finishing my bachelor’s degree I started with the master track Architecture, but within a year I discovered that my focus was different from that of other students. My designs were mostly based on the demands and needs of people, users of a building, customers or occupants. I always wondered which people were going to use the building, what their needs would be, and also who would be in charge to make it all happen, who would finance the development, what the environment would be like, how the loca-
tion may be reached, etcetera. At least in the beginning of a project, a good designer should distance himself from these kinds of difficulties and focus on the concept. So I think that, looking at it this way, I wasn’t a very good designer. I was far too pragmatic. When I had to make concessions to a design, functiona-

The core activities of Interface are the carrying out of independent scientific research and consultancy activities in the field of housing and the built environment. The aim is to improve the quality of the built environment by innovative research. This type of research supports the activities and policy of ministries, municipalities, investors, property managers, housing associations and consumer organizations.

The research conducted at Interface is very diverse and it ranges for example from research about the transformation of empty offices on behalf of a municipality, to customer satisfaction and dwelling perception research commissioned by housing associations. In addition, a study regarding the attractiveness of shopping areas commissioned by a commercial party may be part of the research too. I believe this diversity offers me a great opportunity to begin my career as a researcher. I get the chance to gain insight into a lot of different markets (housing, offices, shops/retail, et cetera), and I get acquainted with a large variety of clients (such as governments, housing associations and commercial parties). Because several different studies are performed simultaneously, my work is much more diverse than I had previously thought.

Apart from my work as a researcher, I am also involved in education. It is especially challenging to guide students and to teach them to be critical about their own work and that of others. I think this is one of the most important things one should learn at a university: think and reflect, what is a proper way to proceed and what is not, and how can I make improve-
ments. As a master graduate you are expected to be critical and analytical and I hope that I can make a small contribution to further this attitude.

Future

When I finished my first study I was not ready to be a psych-
ologist or become a researcher. But now, after taking a few detours, I discovered that doing research fits to my per-
sonality very well. Because no matter how frustrating doing research can be sometimes, it is also very interesting. For almost anything, such as starting new developments, man-
aging projects properly and giving good advice, conducting profound research in advance is essential.

For now, this is where my career starts. I will be a researcher and whatever specific field of study I will be working in, users, or maybe people in general, will be my main subject.

M.J.K. Leussink M.A MSc

Marieke Leussink graduated at the Catholic University Nijmegen (now called the Radboud University) in September 2009. She completed her Master in Real Estate Management and Development (REm&D) at the Eindhoven University of Technology in February 2010. Nowadays she works as a researcher for Research Institute Interface, which is linked to the Chair of REm&D at the Eindhoven University.
immigrants, to the Netherlands. Polish workers, also called labor natives. This situation creates an influx of their legal status equals that of Dutch needing additional permits. In fact, the Polish people are allowed to stay the Dutch and European legislation free to migrate across Europe. Due to the Polish inhabitants were meant that Polish inhabitants were European Union May 1, 2004, which polishes labor or due to limburg for housing. Alumnus Tu/e owner of the project development bureau Loeff R&PS B v. During his gradu- management and Development at the university of Technology Eindhoven. are the main focus in this study. Limburg. It seems obvious that the Polish labor immigrants more challenged to take a position in this issue. There is a social housing problem that needs to be solved. Governments for this topic increases. The situation appears to evolve to a unceasing media attention in Limburg, the public attention Limburg resides a lot of Polish labor immigrants. Based on recent studies show a large proportion of the Polish labor immigrants that resides in The Netherlands is not satisfied with their current housing situation (Weltverde, De Boom, Reza, Zuiderwijk & Enbersen 2009). The media in Limburg, a province in the south of The Netherlands, regularly reports on the housing of labor immigrants. In most cases this concerns shared housing that does not meet legislation or statutory guidelines. In some situations reported living standards even show signs of slavery. Whenever the landlords, mostly employers, are taken responsible in these situations, they often use the lack of suitable legal housing as the main argument for defense. Also, the demand for low budget and low quality housing standards by Polish labor immigrants is often used as an argument by landlords. The Polish labor immigrant does not participate in these discussions and is rarely heard at all.

“There is a hunger for more insight into the housing situation of Polish immigrants and the demand for immigrant housing in Limburg.”

Limburg resides a lot of Polish labor immigrants. Based on unceasing media attention in Limburg, the public attention for this topic increases. The situation appears to evolve to a social housing problem that needs to be solved. Governments and social housing companies are therefore feeling more and more challenged to take a position in this issue. There is a hunger for more insight into the housing situation of Polish labor immigrants and the demand for immigrant housing in Limburg. It seems obvious that the Polish labor immigrants are the main focus in this study.

Problem diagnosis and research design

The aforementioned designation shows a clear problem in the housing of Polish labor immigrants in Limburg. This article will try to answer how can be determined whether improving of housing condition of Polish labor immigrants in Limburg, judged from the housing demands of this group, is necessary and possible? The knowledge that is required to answer this aforementioned question is provided through research on the following topics:

- definition and personal characteristics of the Polish labor immigrants in Limburg;
- housing requirements of the Polish immigrants in Limburg;
- quality of Polish labor immigrants’ current housing situation;
- adequacy of the alternative existing housing supply in Limburg;
- any factors outside the housing supply that influences the possibility for the Polish labor immigrant to relocate.

Extensive research was performed to give insight in these issues. Different research methods were applied, for example: secondary analyses, a literature study, interviews and quantitative analyses based on a survey conducted under 132 Polish labor immigrants, where each survey contained 92 questions. Figure 1 shows the research design and provides a structural overview of the reviews, which research methods are used and how the combined outcome leads to the required answer to our problem definition.

Research

Personal characteristics of the Polish labor immigrants in Limburg

This study relates to the group of Polish labor immigrants living in Limburg between May 20, 2000 en June 25, 2000. In this period we estimate the total population of Polish labor immigrants in Limburg to be around 15,000 people, based on information provided by the municipalities in Limburg. For this study we are generally interested in the qualitative and quantitative housing demands of the group. Nevertheless, more insight in the group characteristics is needed to observe the interaction between this group and the housing market. Therefore individual characteristics like gender, age, working situation and income are collected. The average age of our group is approximately 32 years. Slightly more Polish women are situated in Limburg than Polish men, and over half of all Polish labor immigrants live together with their partner and / or their children. The average family counts 1.7 persons. Taken into account the reduction of housing costs the majority of people earn less than € 1,000 a month. Only a limited number of people earn more than the statutory minimum wage of € 1,407.60 per month. On average, a Polish labor immigrant in Limburg already resides 26 weeks in the Netherlands, and slightly less than half of the group came to The Netherlands for the first time in 2000 or later. There appears to exist a group ‘shuttle immigrants’ who returned to The Netherlands more than ten times since their first arrival. Over half of all Polish labor immigrants in Limburg want to settle permanently in The Netherlands.

Housing requirements of the Polish labor immigrants in Limburg

To determine the adequacy of every other housing situation we asked our survey group for their housing needs, which were determined by important characteristics of a housing situation such as type, intern facilities, location, price and neighborhood facilities. Based on this information we were able to develop a model that is shown in Figure 2. This model distinguishes seven levels of characteristics. Assuming that sufficient information over a specific housing situation is available this model provides a score on every defined characteristic that represents the level of adequacy for that specific characteristic.

Quality of Polish labor immigrants’ current housing situation

To be able to determine to what extend the current housing situation corre- sponds to desired housing situation in general we first measured the overall level of satisfaction with the current housing situation and the tendency among the group to relocate, generally a good indicator. It appears that approximately half of the group is satisfied with their current housing, but at the same time, more than ninety percent of the group has the intention to relocate.

For a more specific determination we used our model. The outcome of our model shows that the hunger to relocate is based on a current housing situation that only slightly meets the group requirements. More than half of the Polish labor immigrants have to share their dwelling, rooms or facilities and would rather not do so. Only few are willing to share their bedroom, while a vast majority of the Polish labor immigrants in current situation have to do so with two or three other, usually not related, persons. Furthermore, most of the people strongly prefer a dwelling in or near the centre of a town or village, while many of them currently live isolated on the countryside, at recreation parks or on the working site. A Polish labor immigrant in Limburg pays around an average of € 350 each month for housing facilities in case the bedroom is shared with others. This equals the price that the group is willing to pay for housing facilities that meets their requirements. In general these requirements can be defined as a private bedroom and private sanitary facilities.

The unification of the European Union progresses rapidly. Poland joined the European Union May 1, 2004, which meant that Polish inhabitants were free to migrate across Europe. Due to the Dutch and European legislation the Polish people are allowed to stay and work in the Netherlands without needing additional permits. In fact, their legal status equals that of Dutch natives. This situation creates an influx of Polish workers, also called labor immigrants, to the Netherlands.
FIGURE 2
Score sheet adequacy model

<table>
<thead>
<tr>
<th>Main Level characteristics</th>
<th>Sub Level characteristics</th>
<th>Score</th>
<th>Score on main level</th>
<th>Score on sub level</th>
<th>Maximum score</th>
<th>Score on main level</th>
<th>Score on sub level</th>
<th>Maximum score</th>
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<tr>
<td>Housing type</td>
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<tr>
<td>self-contained/shared</td>
<td></td>
<td>55%</td>
<td>100%</td>
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<tr>
<td>group position</td>
<td></td>
<td>82%</td>
<td>100%</td>
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<td>facilities around the</td>
<td></td>
<td>55%</td>
<td>100%</td>
<td>45%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>type of housing</td>
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<td>75%</td>
<td>100%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>rooms</td>
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<td>facility inside the house</td>
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<tr>
<td>social conditions</td>
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<tr>
<td>total rest of the facility</td>
<td></td>
<td>15%</td>
<td>100%</td>
<td>25%</td>
<td>100%</td>
<td></td>
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</tr>
</tbody>
</table>

Adequacy of the alternative existing housing supply in Limburg

Based on a global analysis of the existing housing supply in Limburg, it can be concluded that only for a small part of the group the sufficient requirements can be met. Most of these cases concern Polish labor immigrants who require low budget self-contained housing. Mainly based on budget requirements almost this entire group is reliant on the social housing market.

Due to the lack of available shared housing in Limburg, the requirements of Polish labor immigrants who seek shared housing in most cases will not be met. Existing shared housing is mainly used institutionally for healthcare or other social functions. In Figure 3 the quantitative demand for additional housing in Limburg is shown. Only the typology shared/self-contained is used as a characteristic.

“These package deals make an immigrant almost a ‘hostage’ of his employer.”

Additional factors that influence relocation capabilities

Out of the interviews and the survey amongst the research group we conclude that, besides the language barrier, the relationship between the Polish labor immigrant and it’s employer in general is a very influential factor considering the immigrant’s capability to relocate. In most cases the employer is also the landlord and housing is part of the temporary employment contract. These package deals make an immigrant almost a ‘hostage’ of his employer.

Conclusion

At the moment, a lack of sufficient suitable supply of housing in Limburg can be detected. Two groups with very different demands can be distinguished.

“Unless a social housing association targets them as their primary group, this market is very hard to access for the Polish labor immigrants.”

The first group would like to reside in a regular low budget self-contained family dwelling. Most of these people intent to settle permanently in The Netherlands. Due to their low income this group is depending heavily on the social housing market for their housing needs. Unless a social housing association targets them as their primary group, this market is very hard to access for the Polish labor immigrants due to language barriers and allocation policies. Wonen Limburg seems to be the only social housing association in Limburg that puts effort in the housing of Polish labor immigrants. Native Polish speaking employees were hired to serve this group. The study also shows that between three thousand and four thousand new family dwellings are needed. As the overall population in Limburg is shrinking, housing association must carefully plan their developments.

So yes, the housing condition of the Polish labor immigrant needs to be improved. Unfortunately only a minority will also be able to do so, mainly due to their ‘hostage’ situation.

Improving the housing condition of Polish immigrants in Limburg only seems to be possible when Polish labor immigrants are entitled to an independent and equal access to the Limburg housing market, so that this market will be able to evolve.

 Adequacy of the alternative existing housing supply in Limburg

Conclusion

Additional factors that influence relocation capabilities

“These package deals make an immigrant almost a ‘hostage’ of his employer.”

Qualitative demand for additional housing in Limburg

FIGURE 3

So yes, the housing condition of the Polish labor immigrant needs to be improved. Unfortunately only a minority will also be able to do so, mainly due to their ‘hostage’ situation. Improving the housing condition of Polish immigrants in Limburg only seems to be possible when Polish labor immigrants are entitled to an independent and equal access to the Limburg housing market, so that this market will be able to evolve.

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“These package deals make an immigrant almost a ‘hostage’ of his employer.”

Qualitative demand for additional housing in Limburg

FIGURE 3

So yes, the housing condition of the Polish labor immigrant needs to be improved. Unfortunately only a minority will also be able to do so, mainly due to their ‘hostage’ situation. Improving the housing condition of Polish immigrants in Limburg only seems to be possible when Polish labor immigrants are entitled to an independent and equal access to the Limburg housing market, so that this market will be able to evolve.
On this page, an overview of the most recent graduation reports of the master track Real Estate Management and Development at the Eindhoven University of Technology can be found. A complete list of all graduation reports from past years can be found on the website of SerVicE:

www.service-studievereniging.nl

Placing an order is easy and can be done by completing the order sheet on the website. The purchase costs for a single report amount 30 Euros and include shipping. The delivery time will be approximately two weeks.

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Master track: REMD
Year of publication: 2010
Language: Dutch

Follow the customer “A study into customer oriented urban development.”

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Retail potential in Russia “A survey to identify the retail expansion in Russia.”

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Year of publication: 2010
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The rebound effect “Indications of the rebound effect on the Dutch housing market.”

Author: Gerit Wijnen
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Language: English

Shopping behaviour of expatriates “A cross-cultural study of American, British and Japanese expatriates in Amstelveen and Amsterdam.”

Author: Oscar Zijlmans
Order: 413
Master track: REMD
Year of publication: 2010
Language: Dutch

The changing demand for retail properties under the influence of online shopping “A study into the future strategies of retailers.”

Author: Annemarie Leuw
Order: 410
Master track: REMD
Year of publication: 2010
Language: Dutch

Opportunities in times of crisis “A study into the criteria used by financiers to rate property developers in the year 2010”

SerVicE is the study association which represents the master track Real Estate Management and Development at the Eindhoven University of Technology. We represent both current and future students who are interested in the field of real estate.

Activities
In collaboration with the Foundation SerVicE Magazine, study association SerVicE publishes the SerVicE Magazine once a year. During the course of a year, we also organize many other activities, like a study trip to a foreign country, multiple trips, lectures, symposia, workshops and much more.

Getting in touch with the students
In our opinion, it is of utmost importance that students come into contact with the professional real estate sector so they can be informed about opportunities in real estate during and after their studies. SerVicE achieves this by organizing activities where students and real estate professionals come together. We are always looking for new contacts and new sponsors!

Supporting SerVicE
Would you like to support SerVicE, organize an activity or advertise in this magazine? Then please feel free to contact us. This is a great way to become generally known amongst the students. Investing in student is investing in your own future.

More information
For more information, please visit www.service-studievereniging.nl or subscribe to the LinkedIn group of study association SerVicE.

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Upcoming theme

‘Urban Renewal’

The central theme of the upcoming edition of the SerVicE magazine will be ‘Urban Renewal’. Urban renewal can be seen as the process where a neighbourhood or area is improved and rehabilitated. It is widely considered to be an economic engine and reform mechanism. Many cities link the revitalization of their business district and the gentrification of residential areas to earlier urban renewal programs. Over time, urban renewal evolved into a policy based less on destruction and more on renovation and investment. However, some still think of urban renewal as the demolition of neighbourhoods. Besides the theme, several other articles will be published. Are you interested in writing an article for the SerVicE magazine or do you know people who could make a valuable contribution? Please contact the editorial staff via the following contact information.

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Interface is an Institute specialized in independent research and consultancy. The Institute is part of the department Architecture, Building and Planning of the Eindhoven University of Technology.

Areas of interest:
- Customer satisfaction research
- Research in real estate markets
- Portfolio- & asset management
- Feasibility studies
- Place and real estate branding
- Creation of added value

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Syntrus Achmea gelooft in samenwerking om te komen tot het meest duurzame resultaat. Vanuit deze overtuiging nodigen we iedereen uit om met ons mee te denken over de toekomst van de stad. Over het wonen, werken en winkelen van 2030. Welkom in Wikistedia. www.wikistedia.nl