Radboud Universiteit Nijmegen

MASTER THESIS

The attractiveness of an outsourcing provider

Author: Daan Schraven
Student number: 4000013
E-mail: d.schraven@student.ru.nl

University: Radboud University
Faculty: Faculty of Science
Study: Master Information Science

Date: 06-07-2012
Graduation number: 165IK

Supervisor: prof. dr. ir. Th.P. van der Weide
Second supervisor: dr. L. Consoli

Abstract

This paper looks at the attractiveness of an outsourcing provider and shows how their attractiveness can be improved. By creating a new model based on literature study, the advantages and risks of outsourcing we see that outsourcing can be divided in six important dimensions. These dimensions are defined based on the viewpoint of a country.

To define 'attractiveness' we had to set a golden standard to which other countries can be compared. The most logical country, is the one who's the most successful, therefore we chose India. We need some approval that this new model is reliable, thus we needed a country close to the success of India, which resulted in China. The outcome of the model from India and China are used to calculate the similarity, which represents the attractiveness. A high cosine similarity means attractive and low similarity means not attractive.

These six dimensions have causal relationships; by visualizing these causal relationships we found that the culture dimension is very important and plays a critical role in outsourcing. This culture dimension only influences other dimensions, but does not get influenced by others.

By using the causalities it is possible to improve the dimensions over time. When these dimensions are improving, the attractiveness is also improving. The two most important dimensions are the knowledge and government dimensions. These are the catalyst for improving the attractiveness.

Table of Contents

Table of Figures

Table of Tables

Preface

It was a pleasure to combine my personal interest with my master thesis. The idea for this research originates from a few amazing experiences in my life. During my masters' degree, I had the opportunity to see and experience different cultures. Together with a group of students we visited India and China with as main theme 'outsourcing'.

Last year, I have conducted volunteer work in Zambia for three months. Somehow I wanted to combine these rich and wonderful experiences from, India, China and Zambia in one project. I would like to thank my supervisor Theo van der Weide for his tremendous help and supporting me during this period of the thesis.

Introduction

The latest and rapidly improving technology go hand in hand with the communication with the rest of the world. These new communication channels are better and more usable than most people would expect. Developing countries have grown faster than the developed countries in the world (Dollar, Hallward-Driemeier, & Mengistae, 2006). Globalization insures that people around the world have more knowledge and are trained for a particular profession.

All these developments are providing opportunities for businesses. A possibility for a business investment could be outsourcing. This paper looks into the attractiveness of an outsourcing provider and what this provider could change to make it more attractive.

1.1. Research question

The following research question will be answered during this research:

To what extent is a country attractive for outsourcing and how can this be improved?

Outsourcing
Outsourcing is central in this research. The end goal is to measure the attractiveness of an outsourcing provider and find ways to improve this attractiveness. It is the architecture of the solution and not the execution of the model. The following sub-questions must be answered before the main research question can be answered:

- *What is the definition of outsourcing?*
  Outsourcing is a very broad subject and not only conducted in the information technology industry. We need to find out what the exact definition of outsourcing is before we can go any deeper into the subject.

- *What are the benefits and risks of outsourcing?*
  There are a lot of benefits and risks attached to outsourcing, not all of them are within the scope of this research. We have to understand the most important factors from the viewpoint of an organization, because these will be very helpful when creating the model.

- *What makes a country attractive as an outsourcing provider?*
  There must be factors, which make an outsourcing provider attractive. Besides India and China there are more countries that are popular in the IT outsourcing industry. What makes these countries attractive and how do they measure the attractiveness?

- *What is the ideal situation for outsourcing providers?*
  We have to find out what the ideal situation is for outsourcing providers. This ideal situation is the goal for other countries.

- *What policies can improve the attractiveness?*
  Are there any policies that can improve the attractiveness of a country? How are we able to identify these policies and is it possible to use these policies?

1.2. Relevance

The relevance of this research is that outsourcing has grown from a rare phenomenon to a standard in business strategies. Companies are looking for different ways to reduce their costs and risks, especially with the current economic crisis. The continuous search for new opportunities will make the difference in the long run and information technology provides solutions for organizations to automate certain processes and therefore play a very important role.

"*On one hand you have the current intensive cost-cutting companies by moving their work offshore. And on the other hand you have the politicians that are using global services offshoring as an easy scapegoat for current economic woes and high unemployment levels in their home countries. Although signs of a slowdown in the growth of global services are evident in this environment, don't expect offshoring to end. In fact, the global services industry's full potential is ready to be tapped.*" (A.T. Kearney, 2011).

The location of your outsourcing business will be determined by a lot of factors. It is interesting to know which countries are attractive and what their weaknesses are. In this research a model is proposed to measure the attractiveness of a country and find global ways to improve their attractiveness.

1.3. Method

There are many existing papers about outsourcing, so by reading and searching other papers about this subject we will try to understand the know-hows about outsourcing. The literature used in this research will be in the bibliography and organized according to the APA standard. These references will be visible throughout the whole research.

The research method used in this paper is visualized in figure 1.

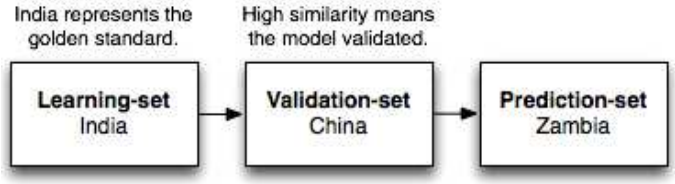


Figure 1: Research method

First the term outsourcing has to be defined, with this information a model will be made. The model will exist of different categories and every category is measurable. In the figure above the model will first be used to measure India. The outcome of the model is the current state of a country. Since India is the most popular country, their outcome will be used as golden standard. This means that it is an example for other countries, in other words, a goal for other countries.

We need to know whether the model is reliable, this is done by measuring China and calculating the similarity between the outcome of the model from India and China. When it receives a high cosine similarity we have our validation, since China is the second most popular outsourcing country.

Now the model can be put to use and as an example it will be used to measure Zambia, a country not known in the outsourcing industry but perhaps with possible potential. Zambia is thus the prediction-set.

1.4. Result

The result of this research is a model that has the ability to measure the current state of a country. With this outcome we can compare it with our defined golden standard. When it receives a high similarity the country has a high attractiveness. When it receives a low similarity, there is need for improvements.

The outcome of the model displays the weakest and the strongest points for a certain country. The model has causal relationships that influence each other. With smart use of these causal relationships we can point out where this country has to start, to improve their weakest points.

To finalize this research, Zambia is used as prediction-set and therefore will be measured with the created model, the weakest points will be identified and recommendations are given on how to improve these.

All the steps executed is this research are displayed below in figure 2.

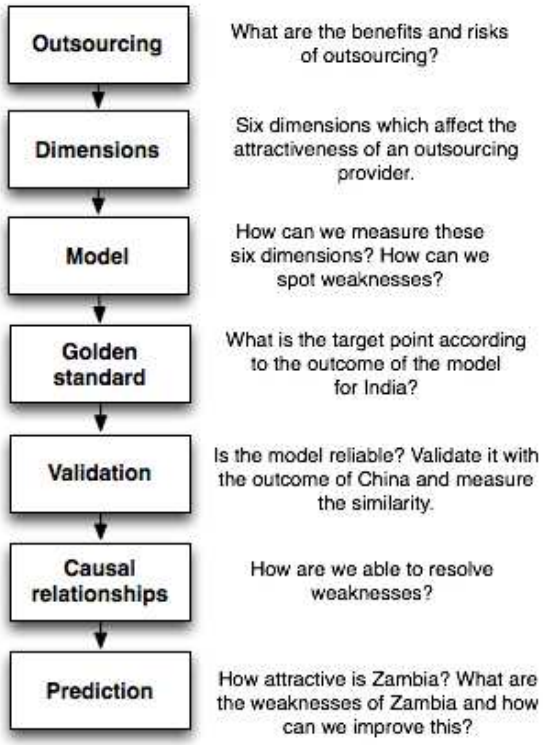


Figure 2: Definition

Outsourcing

It is said that outsourcing has been around for centuries, as it appears that the Romans outsourced their tax collection (Kakabadse & Kakabadse, 2002). But the first real big IT outsourcing deal was conducted on October 2, 1989. A contract between Kodak and IBM was signed that changed IT outsourcing. Kodak handed over control of its datacenter operations to IBM; this contract was signed for 250 million dollars (Rao, 2004).

Reducing the expenses of your company is an idea that never loses its appeal. The opportunity to have less expensive but well trained labor has led companies to look further than their own borders. In recent statistics it shows that the popularity of IT outsourcing across borders is becoming a trend. In 2011 A.T. Kearney found that the world of services offshoring has changed dramatically since they have published a previous document about outsourcing in 2004 (A.T. Kearney, 2011).

"What was then an emerging phenomenon that seemed to have great potential is now a natural element of corporate services supply chain. The industry has grown significantly and in many cases exceeded expectations from the early days." - (A.T. Kearney, 2004)

2.1. Definition

The term outsourcing could be described, in the simplest form, as the process of contracting a business function to someone else. Or it denotes as the continuous procurement of services from a third party, making use of highly integrated processes, organization models and information systems. But it's most commonly defined as the transfer of activities and processes previously conducted internally to an external party (Ellram & Billingtone, 2001). In any case two organizations have a contractual agreement, which involves an exchange of services and payments.

One of the biggest changes in the last few years has come from a growth in the online technologies. These new forms of communication make it possible to conduct work from anywhere around the globe. More people are working from their desks at home with remote desktop and transferring phone calls to their mobile phone. Because of these kinds of technologies offer more control over the progress of the business overseas.

Outsourcings are done both domestically and internationally. International outsourcing is being referred to as offshore outsourcing. With *offshoring* you transfer the ownership and the location of the business. This may be done through outsourcing, using external resources or internal resources e.g. foreign investments (Hätönen & Eriksson, 2009).

When you are outsourcing internationally, but that country lies within the borders of your own continent, we talk about *nearshoring*. And *onshoring* means relocating business in your own country (Erber & Sayed-Ahmed, 2005).

2.1.1. Categories

Outsourcing can be distinguished in three different categories. In *Business Process Outsourcing* (BPO), a particular process task is outsourced. This kind of outsourcing work could be either front office or back office. Typical front office work is customer related work like marketing and technical support via the telephone. Examples of BPO are call centers, data entry, marketing, web designing and development, proof reading and editing, book keeping and business consultancy (Rose India).

In a recent study it shows that traditional outsourcing is under threat. A.T. Kearney states that offshoring is still standing strong, but the multi-year contracts that involve outsourcing are not as popular anymore. This is mainly about maintaining custom code, which requires a number of employees standing standby all the time.

"*Such services require that outsourcers combine BPO services with cloud-based technology, enabling customers to outsource entire business processes and only pay for the information they access or use.*" - (A.T. Kearney, 2010)

In *Knowledge Process Outsourcing* (KPO), work is performed which needs higher levels of involvement from the worker. More advanced levels of research, analytical and technical skills are needed. Decisions are also made on a higher level than with BPO. Examples of KPO are pharmaceutical research, animation and simulation, legal services, content writing and development. This sector of outsourcing is not as old and mature as BPO (Rose India).

Last but not least *Information Technology Outsourcing* (ITO). ITO is outsourcing of computer or Internet related work, such as programming Typical countries for ITO are India and China (Rose India).

2.1.2. Conceptual model

With all information in this chapter, we can zoom out and create a conceptual model to give a better perspective on outsourcing. This conceptual model has an addition, the figure from Erber and Sayad-Ahmed displayed in the container 'location'.

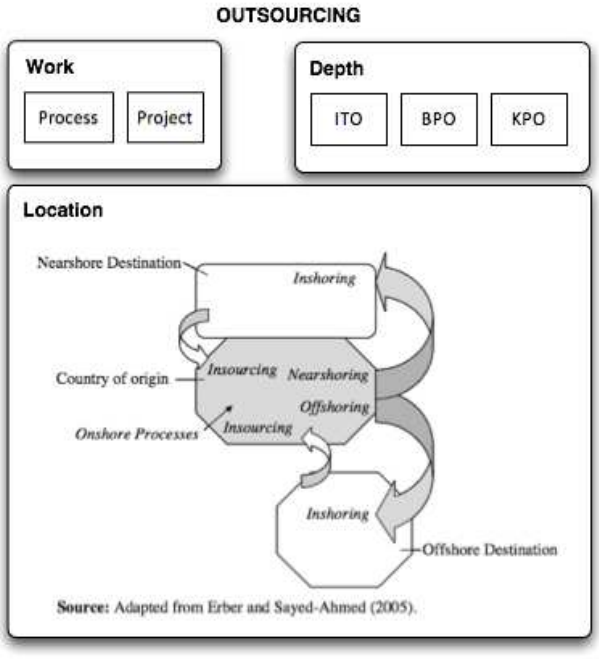


Figure 3: Conceptual model about outsourcing.

2.2. Benefits

When outsourcing started to become popular amongst companies, the primary reason was to reduce the costs (Belcourt, 2006). Nowadays outsourcing has become a lot more tempting and interesting thanks to a large number of reasons (The Outsourcing Institute). There are literally numerous of benefits for outsourcing, but for ITO the most important reasons are listed below. These are mostly from the viewpoint of an organization.

Cost reduction
In most cases the decisive factor is cost reduction. With the economic crisis it could be a wise decision to move business to a place where the price of labor is more attractive (Figure 4: Wages for various countries). But you should keep in mind that outsourcing does not cut in your expenses immediately, especially when offshoring (Overby, 2003). In a recent Outsourcing Institute survey, companies reported that on average they saw a 9% reduction in costs through outsourcing.

> "*The vendors say you can throw it over the wall and start saving money right away. You have to build in up to a year for knowledge transfer and ironing out cultural differences.*" – (Overby, 2003)

Another element of cost savings would be *tax benefits*. Different countries handle different amounts of tax on products. This is also a big advantage for cost reduction when this applies for your organization.

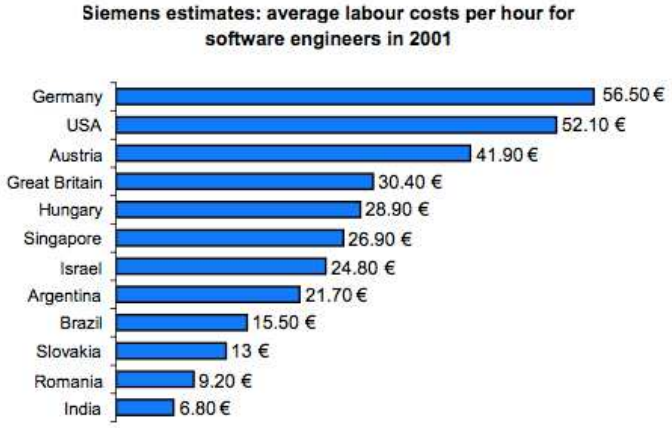


Figure 4: Wages for various countries.

Focus on core business only
The strategic part about outsourcing is to outsource your non-core business tasks only. This way you keep your focus and full control on the important tasks of your organization. With focusing on core-business only you will immediately reduce the risk of brain draining. *Brain draining* is the term for losing knowledge, in this case within your company.

In some countries, people are switching jobs easily when they could earn more at another firm. In Hyderabad (India), I talked to an IT manager at the software park. He said that he had people switching jobs for a minimal change in salary, e.g. € 0.10 euro. To prevent this they had to give their employees a decent raise every year and work with bonus systems.

The most *time consuming routine tasks* can also be outsourced. Especially when some tasks within the company are seen as 'difficult to manage', outsourcing can remove or minimize a function that is considered as problematic (Jurison, 1995).

Outsourcing reduces the need to invest capital funds in non-core business functions; this makes capital funds more available for core business (The Outsourcing Institute).

Access to skilled workforce and talents

The journey of finding skilled resources is one of the biggest challenges for companies. Offshoring offers IT companies access to a skilled workforce. Side advantages are lower labor costs and of course the quantity of the skilled workforce. Having access to a group of engineers, ready to work, is very important, especially in the software development field.

Companies are more likely to establish a branch in India or China, instead of the USA. When an organization is in immediate need of a large number of engineers, they have more chance of finding these in India and China then in the USA. In other words, it is important to always have access to a large skilled group of people ready for the job. This is what they call *one-time application*. Those are applications that need to be developed or modified for only a specified time which require a high manpower resource at that time. For this organizations need to do a lot of work in a relatively short period of time. This is expensive and outsourcing could be one of the best solutions in this situation.

High availability

In many researches high availability is referred by the term 'follow-the-sun'. The idea is to have 24/7 continuous operations. To address higher availability for customer service, offshoring towards another continent is a strategic decision (Djavanshir, 2005).

This benefit is more applicable when you have a call center across borders. This call enter increases the availability of your company. In short this is of relevance with services instead of software engineering.

Reducing the time it takes to complete a project is something every company wishes. With offshoring in a different time zone, you will have employees working around the clock. Taking advantage of this time difference will reduce the time required to complete projects.

Sharing risks

The effects of outsourcing on companies are:

- Becoming more flexible;
- More dynamic;
- Able to change themselves to meet changing opportunities.

Outsourcing certain components of your business processes help the organization to shift responsibilities to the outsourced organization. The outsourced organization is in most cases the specialist and thus should be able to plan those risks factors better.

On the other hand the outsourced organization should be able to meet your growth requirements. It will be very unlikely that they will have a bunch of experienced people on demand. Choosing your partner in outsourcing will be an important and strategic decision; you will be sharing risks, strategy and obviously also your goals.

2.3. Risks

There are a lot of risks associated with outsourcing. Should an organization decide that they want to outsource, they must choose wisely where they are going to outsource their work. A company must take all the risks in account that they could face during this period of time.

Outsourcing tends to generate strong emotions among both information system professionals and general managers (Earl, 1996). There is a lot of literature about 'how to do it'. This describes what is the best way to implement outsourcing, such as managing contracts, managing relationships and what type of outsourcing you should consider.

Earl is quite dubious about outsourcing in his paper. He describes and at the same time warns the reader about the biggest risks that a company could encounter while outsourcing. He writes the following:

> "*Are the benefits of outsourcing so great that the risks are worth managing? Or are the risks so manageable that the benefits are worth having – a sort of risk/return trade-off?*" (Earl, 1996).

Since not everybody is that fond of outsourcing, there are researches about decision models whether to insource or to outsource. Jurison has found a way to calculate this. The basic variables in this model are cost and risk. In figure 5 the relationship between these two variables is shown, costs versus the level of risk (Jurison, 1995).

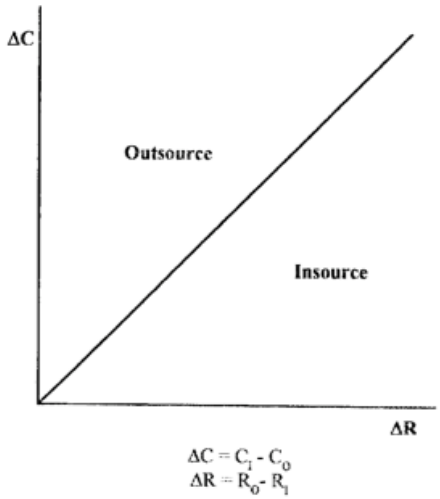


Figure 5: Risk and return model for IT outsourcing decisions.

This risk analysis is a decision model for an organization. It is very simplistic and perhaps a little too simplistic. From my personal point of view, it is not possible to make that choice on these factors alone. There are definitely more factors involved when making the choice of outsourcing.

In the previous chapter the benefits for an organization are described, this chapter is all about the risks attached to outsourcing for an organization.

Hidden costs
One of the most important reasons to outsource is to reduce your costs, but the risk of hidden costs is perhaps the most dangerous one. Most of the time companies underestimate the setup costs, redeployment costs, relocation costs, longer-than-expected costs and international travel expenses.

As stated earlier you will probably put a lot of time and effort in training or managing the management staff in the outsourced firm. A successful outsourcing manager stated in the research of Earl: "*We never anticipated the management resources and time – and thus cost – that we have had to put in.*" (Earl, 1996).

Possibility of weak management
Excellent management is a must within an organization that is outsourcing. When this process is initiated, it is crucial to have good management and especially management that knows how to manage IT business.

When a company already does a poor job on managing within their own company, then it is probably a bad plan to start outsourcing. Managing IT work on an external party is an even more difficult job. In other words, to reduce the risk of poor management a company must be capable of managing the IT business in-house. When this is not the case they should simply hire capable IT management.

Besides the staff, there is the risk of *inexperienced staff*. Even when the labor is cost cutting, it is possible that the new hired staff on the other side of the world is not able to produce the same quality. If they take up twice as much time for the same work, it is safe to say that it's not worth the effort and money.

Miscommunication
It could be the case that English is not the native language in the country where you are outsourcing. This forms risks in the way of communication, paper work and agreements.

Business uncertainty
When the organization decides to outsource, and their only reason is to save costs, they talk about business uncertainty. This could turn out badly if they decide to outsource all of their IT work because it is their highest cost center. This works on a short-term basis, but in the long run they will miss out on their knowledge within the company.

Cultural differences
There are a lot of issues that happen frequently while outsourcing, many of these relate to problems because of cultural differences. It is also said that cultural differences are one of the biggest reasons why offshore outsourcing deals fail or run into problems (Kvedaraviciene & Boguslauskas, 2010).

Classic key issues in outsourcing relations are:
- Directness of communication;
- Native language differences;
- Hierarchy and status;
- Decision making;
- Individual vs. group;
- Time;
- Management style.

Political issues
The political situation could be problematic for your outsourcing business (van der Linden & Hengeveld, 2008). When the political system in the country is not stable it could cause a lot of problems. Policies can also play a huge role, for example the censorship in China.

Poor infrastructure
When the company is on the other side of the world, it's possible that the communication between both parties is not going smoothly. This could occur because of a number of reasons.

Unstable Internet connections could interfere with the communication even more. When you don't want to have high costs on phone calls to the other side of the globe, there are simple and cheap solutions like Skype, E-Mail and video conferencing.

In the early 1980s India had a very low quality infrastructure concerning telecommunications. They targeted this problem with the introduction of the satellite technology to establish connections with their foreign customers (Carmel, 2003).

Based on chapter 2.3 every advantage has its disadvantage, or in this case a risk. In the figure below these advantages are aligned with their risks (Gonzalez, Gasco, & Llopis, Information Systems Offshore Outsourcing: A Descriptive Analysis, 2006).

Advantage	Vs	Risk
Cost savings		Hidden costs
Technical feasibility		Poor infrastructures
Flexibility, speed		Different time zones
More quality		Deficient quality
Advantage derived from entering the market		Problems of a national nature
A more efficient market (macroeconomic)		More unemployment? (Macroeconomic)

Figure 6: Outsourcing advantages versus risks

2.4. Attractive countries

Deciding on starting outsourcing is one thing, but choosing a suitable country for your business is a more difficult job. When you are selecting a country, choose a country that fits perfectly to your organizations strategy. The choice of your outsourcing country can be very easy. Do you simply go where others have gone? If it works for others will it also work for us?

"*Without a proper strategy it will be difficult to select the outsourcing destination.*" (EuroITX).

Many papers describe various decision models that point out what, when or where to outsource. All these models are made for organizations to help them with their choice.

In figure 5, we found a decision model that helps an organization whether to in- or outsource. In figure 7, we find a decision model to choose the outsource provider (EuroITX). These decision models have the same thing in common: the weighting of the advantages against the risks.

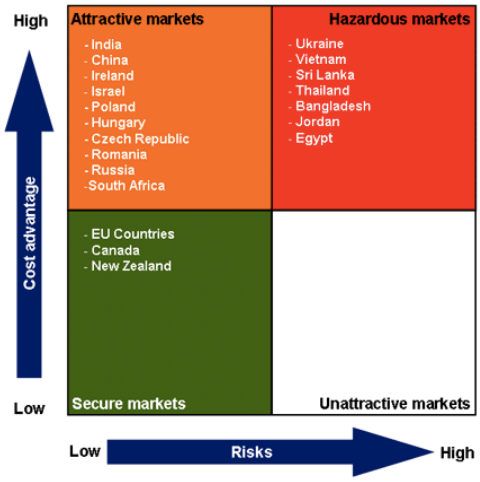


Figure 7: Cost advantage versus risks.

In chapter 2.3 we state that it cannot be possible that only risks and advantages play a role in the decision. Let alone define whether a country is interesting as your outsourcing destination. Based on this, the first hypothesis is formed:

Hypothesis 1:
The attractiveness of a country cannot be measured with only risks and cost advantages.

Aside from these basic decision models, there are more advanced models like the published index of A.T. Kearney. In 2011, they published a top fifty of interesting outsourcing countries. Each country was measured on a few different categories (A.T. Kearney, 2011).

The highlights of this publication, and important in this research, are the leading countries. In all previous published indexes by A.T. Kearney the countries India and China have secured the top. They have the top spots of their tremendous working force with knowledge and experience and of course their cost advantage compared to local wages (A.T. Kearney, 2011).

Since the last list of attractive countries in 2009, the ranks have shifted because of the economic crisis. As an example the United Kingdom has shifted up fifteen spots, because the pound has dropped in value and the wage hasn't been gone up. And Egypt has been moving up two spots,

which makes it to the fourth place. According to A.T. Kearney the region of North Africa has emerged in the recent years as an ideal offshoring location for European organizations that are taking advantage of the regions location and pool of skilled people (A.T. Kearney, 2011).

Only a few countries in the continent of Africa are in this index of 2011. According to other sources Kenya is one of the top three BPO destinations in Africa. In the BPO market, Kenya has a comparative advantage due to the low wages for quality services (SoftKenya). A.T. Kearney focuses on ITO, which could be the reason that Kenya does not occur in the top fifty.

Rank	Country	Financial attractiveness	People skills and availability	Business environment	Total score
1	India	3.11	2.76	1.14	7.01
2	China	2.62	2.55	1.31	6.49
3	Malaysia	2.78	1.38	1.83	5.99
4	Egypt	3.10	1.36	1.35	5.81
5	Indonesia	3.24	1.53	1.01	5.78
6	Mexico	2.68	1.60	1.44	5.72
7	Thailand	3.05	1.38	1.29	5.72
8	Vietnam	3.27	1.19	1.24	5.69
9	Philippines	3.18	1.31	1.16	5.65
10	Chile	2.44	1.27	1.82	5.52
11	Estonia	2.31	0.95	2.24	5.51
12	Brazil	2.02	2.07	1.38	5.48
13	Latvia	2.56	0.93	1.96	5.46
14	Lithuania	2.48	0.93	2.02	5.43
15	United Arab Emirates	2.41	0.94	2.05	5.41
16	United Kingdom	0.91	2.26	2.23	5.41
17	Bulgaria	2.82	0.88	1.67	5.37
18	United States	0.45	2.88	2.01	5.35
19	Costa Rica	2.84	0.94	1.56	5.34
20	Russia	2.48	1.79	1.07	5.34
21	Sri Lanka	3.20	0.95	1.11	5.26
22	Jordan	2.97	0.77	1.49	5.23
23	Tunisia	3.05	0.81	1.37	5.23
24	Poland	2.14	1.27	1.81	5.23
25	Romania	2.54	1.03	1.65	5.21
26	Germany	0.76	2.17	2.27	5.20
27	Ghana	3.21	0.69	1.28	5.18
28	Pakistan	3.23	1.16	0.76	5.15
29	Senegal	3.23	0.78	1.11	5.12
30	Argentina	2.45	1.58	1.09	5.12
31	Hungary	2.05	1.24	1.82	5.11
32	Singapore	1.00	1.66	2.40	5.06
33	Jamaica	2.81	0.86	1.34	5.01
34	Panama	2.77	0.72	1.49	4.98
35	Czech Republic	1.81	1.14	2.03	4.98
36	Mauritius	2.41	0.87	1.70	4.98
37	Morocco	2.83	0.87	1.26	4.96
38	Ukraine	2.86	1.07	1.02	4.95
39	Canada	0.56	2.14	2.25	4.95
40	Slovakia	2.33	0.93	1.65	4.91
41	Uruguay	2.42	0.91	1.42	4.75
42	Spain	0.81	2.06	1.88	4.75
43	Colombia	2.34	1.20	1.18	4.72
44	France	0.38	2.12	2.11	4.61
45	South Africa	2.27	0.93	1.37	4.57
46	Australia	0.51	1.80	2.13	4.44
47	Israel	1.45	1.35	1.64	4.44
48	Turkey	1.87	1.29	1.17	4.33
49	Ireland	0.42	1.74	2.08	4.24
50	Portugal	1.21	1.09	1.85	4.15

Figure 8: A.T. Kearney top 50 interesting outsourcing countries.

In contrast to figure 7, the figure above is a more advanced model. It is being rated on three different categories. India has always been the most popular outsourcing country. A.T. Kearney has an accurate measurement model that is recognized by many other researches and thus reliable. We can say that India is the most ideal situation or in other words, the **golden standard**.

2.4.1. Adding culture

In the previous chapter a hypothesis was formed. A.T. Kearney has an extensive list of countries, which they have measured on a few different categories. As stated there are more factors involved when measuring a country, one of these factors is culture.

Geert Hofstede is a Dutch social psychologist and anthropologist. He is one of the most famous researchers in cross-cultural groups and organization. He played a major role in developing a systematic framework for assessing and differentiating national cultures and organizational cultures. He conducted this research at IBM all over the world. According to his framework there are five important pillars within cultures:

- Power distance index;
- Individualism;
- Masculinity;
- Uncertainty avoidance index;
- Long-term orientation.

We are using Zambia as prediction-set, when looking for Zambia in Hofstede's research, you will find that this country is combined with three other nations. In this case they are referred by the name East Africa and are divided in Ethiopia, Kenya, Tanzania and Zambia (Hofstede, Hofstede, & Minkov, 2010).

"*Cultural differences refer to the extent to which the members of two distinct groups differ on one or more cultural dimensions, that is, their shared values, norms, beliefs and assumptions that help them organize and structure the world.*" (Roberts & Wasti, 2002).

Based on these cultural dimensions, Hofstede conducted one of the most comprehensive studies of how values in the workplace are influenced by culture. Beneath the pillars stated earlier described in detail.

Power distance (PDI)
The power distance is all about hierarchy. It expresses the attitude of the culture towards these differences amongst us. Take as an example the relation between employee and employer in India. People in India have a hard time saying 'no' to their boss. They are simply afraid of doing something wrong in the eyes of the employer.

"*Power distance is defined as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.*"

Individualism (IDV)
Individualism reflects if the people's self-image is defined in terms of *I* or *We*. In typical individualist societies people are supposed to look after themselves and their family only. The opposite of this is collectivism. In collectivist societies people belong to a group, whether this is a tribe, nation, sex or family.

"*The fundamental issue addressed by this dimension is the degree of interdependence a society maintains among its members.*"

Masculinity (MAS)
Masculinity contains two opposites, with a high score this dimension points towards *masculine*. That means that the society is driven by competition, achievement and success. With success being defined by the winner or the best in the field. When a country scores low on this pillar it means that it is *feminine*. This means that the dominant values in society are caring for others and quality of life.

"*The fundamental issue here is what motivates people; wanting to be the best or liking what you do*."

Uncertainty avoidance (UAI)
Uncertainty avoidance has to do with the way that a society deals with the fact that the future is unknown. Let the universe decide what will happen or should we try to control the future? In most cases it is better to prevent than to cure.

"*The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these is reflected in the UAI score.*"

Long-term orientation (LTO)
The last pillar of Hofstede is long-term orientation. It is the extent to which a society shows a realistic future orientation rather than a short-term point of view.

Model

In the previous chapter the term outsourcing, benefits, risks and some basic decision models for organizations have been described. In the formed hypothesis we stated that the decision models could add more factors to make it more accurate.

Based on extensive literature review of outsourcing theories, Gottschalk and Solli-Sæther identified eleven critical success factors in IT outsourcing. Together with risks, they give a clear view of how your company is positioned in an outsourcing process (Gottschalk & Solli-Sæther, 2005).

Frost and Sullivan created seven key success factors for an outsourcing provider country (Frost & Sullivan, 2005) and van der Linden and Hengeveld set up nine criteria for success in outsourcing (van der Linden & Hengeveld, 2008).

3.1. The six dimensions

Most of the success factors in other papers are chosen from the viewpoint of an organization. The goal of this chapter is to create dimensions that are of influence in outsourcing. In other words, what are important and critical conditions for a country to be an IT outsourcing provider? Based on these researches and all information in previous chapter, six dimensions have been put together.

3.1.1. Knowledge

The first dimension is knowledge and possibly the leading dimension in outsourcing. Even if the costs of labor is attractive, without any educated and experienced workforce it is still a waste of money.

"*Education is the most powerful weapon which you can use to change the world.*" – Nelson Mandela

This dimension recognizes two different branches:

- Educational system;
- Quality of the experience.

It is a burden in efficiency, time and cost when your own employees have more knowledge and experience than your future employees across borders. In chapter 2.2 it was stated that one of the outsourcing reasons is the search for greater knowledge and also in larger quantities. Countries like India and China are perfect examples of this, because of their immense numbers of inhabitants.

With a fresh and large pool of graduates every year in a less developed country, the danger exists that they will find jobs across borders for a way larger payroll than in their own country. People tend to leave, this phenomenon on a much higher level is called brain drain.

A major indicator of quality is whether or not a supplier has quality certification. The government believes that this problem will be partly addressed by its education and training measures, but its initiative is to encourage firms to seek quality certification (Qu & Brocklehurst, 2003).

On an organization level the Capability Maturity Model Integration, well known under its abbreviation CMMI, is a worldwide certification developed by the Software Engineering Institute of Carnegie Mellon University. This certification is becoming the industry standard in the offshoring outsourcing market. Generally, buyers only deal with suppliers that have a level three or higher CMMI certificate.

3.1.2. Culture

The second dimension and often underestimated factor in outsourcing is culture. The outsourcer must consider that cultural differences can be significant in the success of the sourcing. Particular points are norms and values, daily habits and of course religion.

"*Culture is more often a source of conflict than of synergy. Cultural differences are a nuisance at best and often a disaster.*" - (Hofstede, Hofstede, & Minkov, 2010)

It is crucial that both parties understand the critical differences between their cultures. Particularly the outsourcer, since they are the guests in another country. A good example is that Indians are having problems in saying 'no' to a superior. When asked if they fully understood the task that was given them, they have the tendency of saying 'yes' (Winkler, Dibbern, & Heinzl, 2008).

These important differences reflect on the work floor and therefore both parties should learn each other's culture to get one step closer to successful outsourcing. With higher values of PDI it indicates an increased fear of consequences and communication gap. In fact two of the three survey questions used by Hofstede for measuring PDI were related to employees' fear of disagreeing with their bosses and the latters autocratic behavior (Hofstede, Hofstede, & Minkov, 2010).

In high PDI countries, subordinates could be very reluctant to freely express their opinions. For instance, criticizing the views of a higher-power person could be perceived as rude in Asian cultures.

3.1.3. Communication

The third dimension is communication. When you are outsourcing many aspects should be taken into account. First there should be occasional meetings, this could be done using Skype or any other online platform. This comes in handy when you have to discuss some topics with someone on the other side of the world. Although Internet meetings are not enough, there must be face-to-face meetings once in a while.

In the communication dimension Internet, language and the time difference play big roles. The language creates a lot of challenges for both parties. Misunderstandings are crucial while outsourcing; bad communication causes difficulties and is more time-consuming. Therefor conference calls take longer, information could be misinterpreted and email volume increases.

Even worse, poor communication is one aspect of any outsourcing relationship that will doom it to failure. From a conducted survey in 2004, it appears that as many as a quarter of the reasons that relationships between the parties involved are ending due to poor communication (16%) and cultural differences (9%) (Outsourcing Center, 2004).

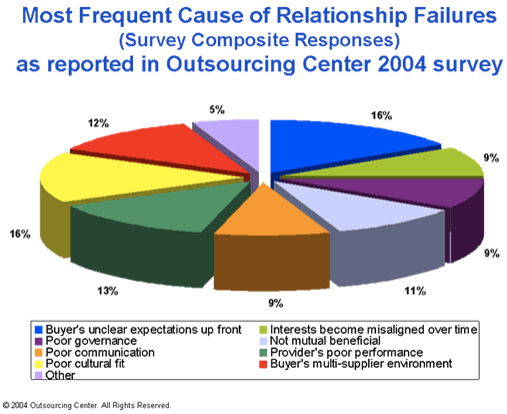


Figure 9: Most Frequent Cause of Relationship Failures. Outsourcing Center 2004 Survey.

As previously stated, online meetings are not sufficient enough, therefore face-to-face meetings are a must when outsourcing across borders. Successful outsourcing requires intense face time during the launch phase and regularly thereafter to establish the rules of engagement and maintain the relationship.

For these frequent face-to-face meetings, the costs are increased, as you and the offshore supplier must make long and expensive trips to and from. These costs are all included in the *hidden costs* risk that is overseen by many managers as they start outsourcing. Remember that these costs include actual travel-related expenses and reduced productivity caused by the absence of your employees. Unwillingness to invest these extra costs is a recipe for disaster. Nonetheless the travel connection between both countries should therefore be in good condition e.g. direct-lines.

With communication, the time differences between these countries could work as an advantage but also as a disadvantage. For example the clock of New Delhi in India has +3.5 hours compared to the time in the Netherlands. This means you have a working advantage of 3.5 hours before people start working here in the Netherlands.

3.1.4. Infrastructure

"An important role of government is to increase economic capacity by improving quality and efficiency of public infrastructure and utilities necessary to business operation." (Egger & Falkinger, 2003).

The fourth dimension is infrastructure. Especially when offshoring, when companies are settling overseas, a decent infrastructure is necessary. The term infrastructure can be interpreted as e.g. the network of roads, public transport, aviation, water, electricity and the Internet connection. But for the scope of this paper, the main points of interest are the stability and speed of for example the Internet connection, landlines and mobile networks and last but not least the electricity network. The electricity is of such importance, without electricity there is e.g. no Internet and telephone, so the communication channel with your offshored branch is gone.

3.1.5. Economy

"*Both developed and developing countries are using outsourcing as a global vehicle to attract investment and boost their economy. Therefore, we must align our economic strategy with world's economies through outsourcing.*" (Ukokobili, 2010).

The fifth dimension is economy. Outsourcing has helped numerous of countries to have a great growth in their economy. Especially India, China and the Philippines. The global outsourcing industry in 2010 was worth more than 1 trillion dollars. This insanely large amount of money has a great source in India, as their market is capturing fifty billion dollars and China around fifteen billion dollars (Leiber, 2010).

According to an article on allAfrica.com it is said that Nigeria has the potential to be an emerging destination of outsourcing; there is a need for the federal government to establish an agency, which regulates all the outsourcing business (Ukokobili, 2010). This shows that investment of big international companies is a crucial factor for a developing country.

3.1.6. Government

The last dimension is government. First of all the need for political stability is very important (van der Linden & Hengeveld, 2008). When this is not the case it will cause problems concerning maintaining contracts and stable investments. The differences in law and regulations can also complicate the relationship between both parties and even become risky (Gonzalez, Gasco, & Llopis, Information Systems Offshore Outsourcing: A Descriptive Analysis, 2006).

The openness of the government for investments in their country is of critical importance. When the government does not support these actions, many projects are doomed to fail. With openness, censorship is important as well. For example China has a strict policy on censorship, this could be a key issue in your outsourcing business (Alon, Herbert, & Munoz, 2007).

But perhaps the most important and crucial role for the government dimension is their position and viewpoint on outsourcing and foreign investments. By altering the licensing and creating possibilities for starting companies, the growth of outsourcing can increase (Indobase).

3.2. Measure the six dimensions

The six dimensions described in previous chapter are the bases of the new model. The model exists of a scoring system for each dimension. This measurement system is kept very basic and not as substantiated as in the research of A.T. Kearney.

The goal of the model is to show the importance of factors that are left out in other decision models, in particular the culture dimension. The published index of A.T. Kearney in 2011 displayed in figure 8 used a measurement model displayed in figure 10.

Hypothesis 1 states that the attractiveness cannot be measured with only risks and advantages. Figure 10 shows that indeed a lot more factors are involved. Thus this gives us the confirmation that the stated *hypothesis 1* is partly true, because A.T. Kearney also agrees that more factors are of influence.

COUNTRY EVALUATIONS BY CATEGORY		
CATEGORY	**SUB-CATEGORIES**	**METRICS**
FINANCIAL STRUCTURE (40%)	Compensation costs	• Average wages • Median compensation costs for relevant positions (such as call center representatives, IT programmers and local operations managers)
	Infrastructure costs	• Includes occupancy, electricity and telecommunications systems • Travel to major customer destinations
	Tax and regulatory costs	• Relative tax burden, costs of corruption and fluctuating exchange rates
PEOPLE SKILLS AND AVAILABILITY (30%)	Cumulative business process experience and skills	• Existing IT and BPO market size • Contact center and IT-quality rankings • Quality rankings of management and IT training
	Labor force availability	• Total workforce • University-educated workforce
	Education and language	• Scores on standardized education and language tests
	Attrition rates	• Relative BPO growth and unemployment rates
BUSINESS ENVIRONMENT (30%)	Country environment (includes economic and political aspects)	• Investor and analyst rating of overall business and political environment • A.T. Kearney's Foreign Direct Investment Confidence Index™ • Extent of bureaucracy • Government support for the information and communications technology (ICT) sector
	Country infrastructure	• Blended metric of infrastructure quality (telecommunications, IT services)
	Cultural adaptability	• Personal interaction score from A.T. Kearney's Globalization Index™
	Security of intellectual property (IP)	• Investor ratings of IP protection and ICT Laws • Software piracy rates

Figure 10: Country evaluations by category

As described in chapter 2.4 the research of A.T. Kearney is well known, referenced a lot and highly accurate. In figure 10 you find that the evaluations done by A.T. Kearney does not use culture. The proposed model integrates the culture dimension, the idea behind the model is to show that the six dimensions are closely interrelated and continuously influence each other. Therefore a new hypothesis is formed:

Hypothesis 2:

Culture cannot be left out when measuring the attractiveness of a country.

3.2.1. Scale

The six dimensions set up in previous chapter must be measured. As stated previously, the model will be kept basic and very straightforward. Even though it is basic, the functioning remains the same.

The scale set up exists of three points, see table 1 below. The grading will be done based on sources and in extreme situations estimation will be given. The scale is from zero to one.

Table 1: Measurement scale for the model.

Score	Description
0,00	It definitely needs improvement.
0,50	It is not bad, but certainly not good.
1,00	This level is desirable.

3.2.2. Measurement system

The measurement system will use the scale set up in chapter 3.2.1. Since every dimension must be measurable, it contains measuring elements. Note that the dimensions do not contain a fixed number of measuring elements. To show that these chosen measuring elements are chosen carefully, the reference is included.

Before the measuring system is usable, all measuring elements have to be defined and show how we will provide them with a score from the scale above. It is possible that a defined measuring element must be scored based on a few measurable facts. Below you find all the dimensions with their corresponding measuring elements.

Table 2: Measuring elements for the dimension knowledge.

#	Measuring element	Reference
1	Skilled workforce	2.2 Advantages (Access to skilled people) 2.3 Risks (Hidden costs)
2	Quantity of people available	2.2 Advantages (Access to skilled people)
3	Students and graduates	2.2 Advantages (Access to skilled people)
4	Usage of CMM	3.1.1 Knowledge
5	IT trainings	(Qu & Brocklehurst, 2003)

Where there is not enough qualified workforce available, the government should address this critical issue immediately. India had companies investing a lot in IT trainings in 2003.

Microsoft, IBM and other Indian IT training firms had heavily invested in the information technology sector. This was to get rid of the issue of not enough qualified people in the IT sector in 2004 (Qu & Brocklehurst, 2003).

1. Skilled workforce

There is the need of a skilled workforce. The workforce contains all job functions, from software developer to management. This will be measured by the following elements:

- Employment rate (in %);
  - *0,00:* <= 40
  - *0.50:* >= 41 and <= 79
  - *1,00:* >= 80
- Literacy (in %).
  - *0,00:* <= 75
  - *0,50:* >= 76 and <= 89
  - *1,00:* >= 90

2. Quantity of people available

The quantity of people available refers to the quantity of the unemployed people whom are active in the field. This will be measured by the following elements:

- Unemployment rate (in %);
  - *0,00:* <= 10
  - *0,50:* >= 11 and <= 59
  - *1,00:* >= 60
- Population growth (in %);
  - *0,00:* <= 0,10
  - *0,50:* >= 0,20 and <= 1,00
  - *1,00:* >= 1,00
- Life expectancy (in years);
  - *0,00:* <= 50
  - *0,50:* >= 51 and <= 69
  - *1,00:* >= 70
- Amount of IT graduates every year.
  - *0,00:* <= 2.000
  - *0,50:* >= 2.001 and <= 14.999
  - *1,00:* >= 15.000

3. Students and graduates

The future will be in the hands of new graduates, therefore the flow of new skilled information technology students guarantee long-term orientation. This will be measured by the following elements:

- Amount of universities providing information technology;
  - *0,00:* <= 4
  - *0,50:* >= 5 and <= 9
  - *1,00:* >= 10
- Amount of IT graduates every year;
  - *0,00:* <= 2.000
  - *0,50:* >= 2.001 and <= 14.999
  - *1,00:* >= 15.000
- Amount of PhD graduates every year.
  - *0,00:* <= 100
  - *0,50:* >= 101 and <=499
  - *1,00:* >= 500

4. Usage of CMMI

The experience, quality and reliability of companies will be guaranteed by the use of CMMI. This will be measured by the following elements:

- Intensity of using CMM;
  - *0,00:* Not at all
  - *0,50:* Medium
  - *1,00:* Yes

- Companies with a score of five on CMMI.
  - *0,00:* <= 5
  - *0,50:* >= 6 and <= 19
  - *1,00:* >= 20

5. IT training

Building experience contributes to the reliability on companies and the workforce, therefore IT trainings are recommended. This will be measured by the following elements:

- IT trainings conducted.
  - *0,00:* No trainings or training on low level
  - *0,50:* Training given on medium level
  - *1,00:* Training given on good level and certification available
- Certification in the information technology sector.
  - *0,00:* None
  - *0,50:* Almost none and not important
  - *1,00:* Certification is important

Table 3: Measuring elements for the dimension culture.

#	Measuring element	Reference
1	Directness of communication	2.3 Risks (Cultural differences) 2.5.2 Culture 2.4.1 Hofstede (Power Distance)
2	Decision making	2.3 Risks (Cultural differences) 2.4.1 Hofstede (Uncertainty Avoidance)
3	Individual versus group	2.3 Risks (Cultural differences) 2.4.1 Hofstede (Individualism)
4	Time	2.3 Risks (Cultural differences) 2.4.1 Hofstede (Masculinity)
5	Brain draining	2.2 Advantages (Focus on core-business only) 2.3 Risks (Long-term orientation) 2.5.2. Culture

The measuring elements described defined in table 3 are common key issues in IT outsourcing, according to a research paper on the underestimated importance of cultural differences (Kvedaraviciene & Boguslauskas, 2010).

In chapter 2.4.1 the Hofstede dimensions are briefly handled. The culture dimension will be measured based on the Hofstede values. These chosen common key issues have namely a reference to all Hofstede dimensions. In table 4 the Hofstede dimension values for China, India, the Netherlands and Zambia are displayed.

Table 4: Hofstede Dimension Values for India, China, the Netherlands and Zambia.

Country	**PDI**	**IDV**	**MAS**	**UAI**	**LTO**
China	80	20	66	40	118
India	77	48	56	40	61
Netherlands	38	80	14	53	44
Zambia	64	27	41	52	25

1. Directness of communication

In cultures there are strict divisions between social groups, which have an influence on how formally or casually we address people. A classic example is the 'yes' problem described in chapter 3.1.2, avoidance of giving negative response and that you will not speak to your superior without permission. This will be measured by the following element:

- Power distance value (PDI).
  - *0,00:* >= 80
  - *0,50:* <= 79 and >= 61
  - *1,00:* <= 60

2. Decision making

In other cultures people's choices are much more restricted than in Western cultures, they obey clear guidelines and rather act alone then take a risk. Therefore expectations of initiative and improvement suggestions are probably not going to be fulfilled. This will be measured by the following element:

- Masculinity values (MAS).
  - *0,00:* >= 70
  - *0,50:* <= 69 and >= 31
  - *1,00:* <= 30

3. Individual versus group

Personal freedom and freedom of speech is what people value in Western cultures. In other countries people have a far more collective attitude. This will be measured by the following element:

- Individualism values (IDV).
  - *0,00:* <= 25
  - *0,50:* >= 26 and <= 49
  - *1,00:* >= 50

4. Time

The value of time is interpreted differently around the world; especially in the Northern European regions they see time as valuable and do not miss deadlines and overrun schedules. While in other parts of the world they are more relaxed about time.

In Brazil it is normal, when a client invites you to a meeting but keeps you waiting for half an hour. The client did not expect the person to arrive on time and does not think time and punctuality are important. This will be measured by the following elements:

- Masculinity values (MAS);
  - *0,00:* >= 70
  - *0,50:* <= 69 and >= 31
  - *1,00:* <= 30

- Uncertainty avoidance values (UAI).
  - *0,00:* <= 30
  - *0,50:* >= 31 and <= 49
  - *1,00:* >= 50

5. Brain draining

With living your life day by day, the mode of life in some less developed countries is 'fast money is good money'. When people are able to earn money *now,* they will take that opportunity because it might not come along anymore. This will cause brain draining when people leave for the smallest benefit. This will be measured by the following element:

- Long-term orientation values (LTO).
  - *0,00:* <= 30
  - *0,50:* >= 31 and <= 59
  - *1,00:* >= 60

Table 5: Measuring elements for the dimension communication.

#	Measuring element	Reference
1	High availability	2.2 Advantages (High availability) 2.3 Risks (Miscommunication)
2	Travel	2.3 Risks (Hidden costs)
3	Language	2.3 Risks (Language)

The first measuring element has a reference to both advantages and risks; this is a bit of a contradiction. The high availability can work in your advantage but it also has a negative side attached. In my opinion the advantage is far greater than the risk, therefore the score will be interpreted as positive when the time-difference is greater.

1. High availability

High availability refers to the amount of productive hours per day that can be covered with the advantage of time difference. This will be measured by the following elements:

- Time difference (in hours);
  - *0,00:* <= 0
  - *0,50:* >= 1 and <= 3
  - *1,00:* >= 4
- Amount of productive working hours per day (in hours);
  - *0,00:* <= 8
  - *0,50:* >= 9 and <= 13
  - *1,00:* >= 14
- Amount of overlapping hours for communication purposes (in hours).
  - *0,00:* <= 2
  - *0,50:* >= 3 and <= 5
  - *1,00:* >= 6

2. Travel

Good cooperation requires face-to-face meetings; the time and travel costs for these meetings should be calculated in the hidden costs. This will be measured by the following elements:

- Travel time (in hours);
  - *0,00:* >= 16
  - *0,50:* <= 15 and >= 9
  - *1,00:* <= 8

- Travel costs (in €).
  - *0,00:* >= 2.000
  - *0,50:* <= 1.900 and >= 1.001
  - *1,00:* <= 1.000

3. Language

It is important that both parties understand each other while communicating. This is greatly dependent on the spoken language. This will be measured by the following element:

- English tongue.
  - *0,00:* No
  - *0,50:* Yes, but not native language
  - *1,00:* Native language or very proper English

Table 6: Measuring elements for the dimension infrastructure.

#	Measuring element	Reference
1	Internet	2.3 Risks (Poor infrastructure)
2	Power	2.3 Risks (Poor infrastructure)
3	Telephone	2.5.4 Infrastructure

1. Internet

The infrastructure for Internet connections is of great importance when operating an information technology business. There should be reasonable Internet for several purposes so that even on long-distance the work cooperation is possible. This will be measured by the following elements:

- Internet speed (in mbps);
  - *0,00:* <= 1,00
  - *0,50:* >= 1,01 and <= 1,99
  - *1,00:* >= 2,00
- Broadband Internet connections (in %);
  - *0,00:* <= 40
  - *0,50:* >= 61 and <= 85
  - *1,00:* >= 86
- Average Internet costs (in €).
  - *0,00:* >= 41
  - *0,50:* <= 40 and >= 21
  - *1,00:* <= 20

2. Power

The infrastructure of power decides whether IT capitals are safe for power outages. It appears that even in an IT capital in India these outages occur often.

"*That an IT-enabled Hyderabad plunges into darkness each time it trains, or even drizzles.*" (Times Of India, 2010).

This will be measured by the following elements:

- Power outages (in days in a year);
  - *0,00:* >= 30
  - *0,50:* <= 29 and >= 11
  - *1,00:* <= 10
- Time of restoring power outage (in minutes)

- *0,00:* >= 30
- *0,50:* <= 29 and >= 11
- *1,00:* <= 10

3. Telephone

Communication channels within the outsourcing country are very important. Are the phone lines in good condition and does it provide coverage over the whole country. Of course this is also important for contact overseas. This will be measured by the following elements:

- Telephone lines (in %);
  - *0,00:* <= 50
  - *0,50:* >= 51 and <= 85
  - *1,00:* >= 86
- Mobile phone connections (in %);
  - *0,00:* <= 50
  - *0,50:* >= 51 and <= 85
  - *1,00:* >= 86
- Mobile phone coverage.
  - *0,00:* No coverage to very little coverage
  - *0,50:* Ok coverage
  - *1,00:* Good coverage

Table 7: Measuring elements for the dimension economy.

#	Measuring element	Reference
1	Labor costs	2.2 Advantages (Cost-reduction)
2	Unemployment rate	(A.T. Kearney, 2011)
3	GDP growth	2.5.5 Economy
4	Investments by companies	2.5.5 Economy

1. Labor costs

The most common reason for outsourcing is cutting back on the expenses, labor costs is the average wage for an employee in the IT sector. This will be measured by the following elements:

- Average wage per month (in **€**);
  - *0,00:* >= 150
  - *0,50:* <= 149 and >= 51
  - *1,00:* <= 50
- Average working week (in hours).
  - *0,00:* <= 35
  - *0,50:* >= 36 and <= 45
  - *1,00:* >= 46

2. Unemployment rate

The unemployment rate has influence on the economy of the country. This will be measured by the following element:

- Unemployment rate (in %).
  - *0,00:* >= 20
  - *0,50:* <= 19 and >= 6
  - *1,00:* <= 5

3. GDP growth

The title of this measuring element speaks for itself. This makes sure it has a steady and growing economy. This will be measured by the following element:

- GDP per capita (in €).
  - *0,00:* <= 1.000
  - *0,50:* >= 1.001 and <= 2.999
  - *1,00:* >= 3.000
- GDP growth per year (in %).
  - *0,00:* <= 5
  - *0,50:* >= 6 and <= 9
  - *1,00:* >= 10

4. Investments

Investments are necessary for an economy to grow. Many companies in India and China have done this. This will be measured by the following element:

- Market shares of IT companies.
  - *0,00:* No investments from foreign countries
  - *0,50:* Few investments
  - *1,00:* Reasonable to many investments

Table 8: Measuring elements for the dimension government.

#	Measuring element	Reference
1	Reducing licensing requirements	(Indobase) (Frost & Sullivan, 2005)
2	Promoting investments from outsiders	(Indobase) (Frost & Sullivan, 2005)
3	Transparent & investment friendly policies	(Indobase)
4	Venture Capital Funding	(Indobase) (Frost & Sullivan, 2005)
5	Western business practices	(Frost & Sullivan, 2005)
6	Censorship	2.5.6 Government 2.3 Risks (Political issues)
7	Political stability	2.5.6 Government 2.3 Risks (Political issues)

The Indian government realizes that IT has the potential to influence extensive economic development in the country. IT is now one of the top priorities of the Indian government and favorable policies are being formulated to extract maximum benefits from the industry. These favorable government policies have proven they are very beneficial in the growth of ITO (Indobase).

1. Reducing licensing requirements

The reforms have reduced licensing requirements and made foreign technology accessible. The restrictions on investments were also removed and it made the process of investment easier. This will be measured by the following elements:

- License requirements;
  - *0,00:* License required
  - *0,50:* Reduced licensing
  - *1,00:* No licensing
- Restrictions on investments.
  - *0,00:* Restrictions on investments
  - *0,50:* Few restrictions
  - *1,00:* No restrictions

2. Promoting investments from outsiders

The promoting of investments from outsiders will help the ITO/BPO industry tremendously. This will be measured by the following element:

- Promoting of investments.
  - *0,00:* No promoting of investments
  - *0,50:* Few promoting is done
  - *1,00:* Promoting is done on regular basis

3. Transparent & investment friendly policies

The government should formulate and implement more transparent and investment friendly policies. A perfect example is that India is opening up their markets for foreign companies. This will be measured by the following elements:

- Investments possible from outsiders;
  - *0,00:* No foreign investments possible
  - *0,50:* Foreign investments possible, but on a small scale
  - *1,00:* Foreign investments approved
- Foreign establishments.
  - *0,00:* None to almost none
  - *0,50:* Medium
  - *1,00:* Plenty of establishments

4. Venture Capital Funding

The importance of VCF is to provide funding for startup software professionals and small IT units. This could go as far as Software Parks that are established in India and China. This will be measured by the following elements:

- Usage of software parks;
  - *0,00:* No software parks
  - *0,50:* Software parks on small scale
  - *1,00:* Software parks supported by government
- Usage of Venture Capital Funding;
  - *0,00:* No use of VCF
  - *0,50:* Little use of VCF
  - *1,00:* Usage and seeing the importance of VCF
- Investments by the government in IT training.
  - *0,00:* No investments done for IT training
  - *0,50:* Investments on small scale
  - *1,00:* Government puts effort in IT training and investments

5. Western business practices

The expertise in western business practices and the understanding of the Western law is necessary to have partnerships between two governments. This will be measured by the following elements:

- Expertise in Western business practices;
  - *0,00:* No expertise
  - *0,50:* A little expertise
  - *1,00:* Expertise
- Expertise in Western laws.
  - *0,00:* No expertise
  - *0,50:* A little expertise
  - *1,00:* Expertise

6. Censorship

Censorship refers to the openness of the government, regarding sharing information on media. The most important media will be Internet of course. When the government blocks certain traffic, which is crucial for the business, this could hinder the success and growth of the outsourced work. This will be measured by the following element:

- Openness of the government (censorship).
  - *0,00:* Use of censorship
  - *0,50:* Little use of censorship
  - *1,00:* No censorship

7. Political stability

The political stability of the government could interfere the outsourcing business. This will be measured by the following element:

- Stability.
  - *0,00:* Not stable
  - *0,50:* Has problems
  - *1,00:* Stable

3.3. Learning-set

The research method of this paper uses a learning-, a validation- and a prediction-set. For the learning-set the country India is chosen. The model, with the dimensions and their measuring elements, will be used in this chapter.

Before India will be measured with the model, all the dimensions will be briefly handled. Below you find general information with a few personal experiences as additions. The choice fell on India because it is the leading country in outsourcing and thus sets an example for other countries. The outcome of the model will define the ideal situation. This ideal situation, from now on referred by the term 'golden standard', will be used as measuring rod.

3.3.1. Knowledge

The British introduced the current educational system in India, which now falls under the responsibility of the government. There are private and public universities that are funded by the federal state and on local levels. The current educational system of India supplies a large amount of highly qualified graduates every year. Every year 550 thousand IT students graduate, from the 563 universities, but only 25% of this number is ready for employment (Julka & Mishra, 2011).

India continues to face challenges, despite the growing investment in their educational system, still a quarter of their population is uneducated. Only 15% of the Indian students reach high school and just 7% of them graduate (Masani, 2008). But with these absurd numbers of population, these 7% are immediately a large pool of fresh graduates. But still only 74,04% of the population is literate (Census of India, 2011).

"*The number of Indian IT professionals has leapt from 56,000 in 1991 to a million today. That's still tiny relative to a population of over a billion, but a rare achievement in a global market where IT has traditionally been the preserve of advanced industrial economies.*" (Masani, 2008).

With this tremendous reach of knowledge in India, it is no surprise that the rest of the world wants a piece of this opportunity. In India I've visited the University of Hyderabad and spoke to several IT students. They said that the university had an incredible large amount of students admitting, that they simply could not handle. Therefore limitations were set on how many students could admit for a study per year. To realize this, they set a very high cut-off point; meaning only the students with straight A's will be accepted.

3.3.2. Culture

The cultural differences between India and, lets globalize it to Europe, are quite different. Next to the language barrier, the weather and religion it has quite some points that an organization should take into account when outsourcing to India.

The Indian society highly values the caste system and is very hierarchically organized. This is visible from the way parents raise their children, but also the relation between employer and employee. It strongly relates to the Power Distance pillar by Hofstede. The hierarchy reflects the way of management. For example, in Europe employers give you more freedom and responsibility.

Before I went to India we were informed that people in India are not as open as we are in Europe. From my personal chats with IT business people and also people from the rural areas you will notice that they are always very polite and wouldn't say a negative word about their country or

company. This contributes to a nice and positive cultural experience, but on the work floor this could be a problem.

The most important cultural difference is Indian people have a difficulty in saying 'no'. It should not come as a surprise when people agree to most things you say, it is difficult for them to show disagreement. As example the employer gives a task to an employee and asks if everything is clear; they will agree even when they don't understand (Winkler, Dibbern, & Heinzl, 2008). This has to do with the hierarchy, they are afraid of saying 'no' to their direct manager.

An example was given when we were visiting a company in Hyderabad. The manager gave an employee the task of installing an information system and report to him when the task was completed. Unfortunately, a problem occurred, instead of reporting the problem to the manager the employee waited until he was asked for the progress of the installation.

3.3.3. Communication

The majority in India speaks Hindi and their official secondary language is English. India has 387 different languages (Mapsofindia.com, 2001). My personal experience is that most people in India speak decent English. Communicating with students at the university did not form any problems, because students come from all over the country and thus have to talk English to understand each other.

The most English-speaking people are in the urban areas. In the rural Southwestern province Wayanad, many people couldn't speak English. Actually a translator was necessary.

India has a time difference of three to four hours compared to the Netherlands. The disadvantage of this is that there are fewer hours to communicate. As previously stated, Indian people have the tendency to say 'yes' on requests. With communication through Internet, this could form problems if no face-to-face meetings are being held.

3.3.4. Infrastructure

Telecommunication

One of the critical success factors for India has been the moment when India switched to satellite connections for telecommunication in the 1980's (Carmel, 2003). These communication channels are well organized in India; with 35 million people using telephone landlines in India they are 9th on the world-ranking list. And with an impressive 752 million people they are 2nd in mobile telephone usage (CIA, 2011).

Mobile phones dominate the communication market in India, largely due to increasing communication infrastructures and advanced technology. Competition between providers is fierce and mobile Internet has become increasingly popular.

Internet

The growth in the number of broadband Internet connections has accelerated since 2006. As of October 2011, the total broadband Internet connection in India has reached 13 million, which is only 1% of the population (CIA, 2011). India has one of the lowest penetrations rates of broadband connectivity in the world (Rediff, 2009). Complicated tariff structure and metered billing hamper the broadband growth. This mainly causes problems for normal households.

In India the average Internet speed is as low as 0.8 Mbps. Out of the total Internet population 35% are still below 256 Kbps. To compensate with international standards of broadband Internet speed, the Indian Government proposed an investment of 13 billion dollar. This investment helps the

national broadband network to connect all cities, towns and villages with a population of more than 500 in two phases targeted for completion by 2012 and 2013. The network will be capable of handling speed up to 10 Mbps in 63 metropolitan areas and 4 Mbps in additional 352 cities.

Energy
In 2009, India was the 4th largest energy consumer in the world. The power generation and transmission network is underdeveloped. They have a lot of fossil fuels but not the expertise and capacity to mine it all, therefore India relies on international markets to deliver their energy resources. The energy sector is government owned. To solve current problems, logistic chains are being optimized, energy equipment industries are developed and energy is evacuated form surplus regions to deficit ones (Dutch Consulate General, 2011).

"*That an IT-enabled Hyderabad plunges into darkness each time it rains, or even drizzles*" (Times Of India, 2010). This shows that power outages are still common in India and even in an IT capital like Hyderabad it happens frequently.

Someone in India asked me a question why Germany uses more power in one year than the whole of India. The answer was that compared to Germany only a few people have dishwashers and such luxury products; it is cheaper to hire a cleaning lady than using these power consuming electronica devices. He said that it would get totally out of hand when everybody was going to start using these products, as they already have trouble handling the electricity.

3.3.5. Economy

India has an economy build on farming, modern agriculture, a wide range of modern industries and a multitude of services. Typical and logical is that a little bit more than half of the work force is in agriculture, but services are the major source of economic growth. With their large educated English-speaking population, they have become a major exporter of IT services and software workers (CIA, 2011). Because of this major workforce, many companies are seeking the knowledge in India. Many multinationals played their role, such as IBM and Texas Instruments (Khan, Currie, Weerakkody, & Desai, 2003).

One thing that definitely stands out is the working week in India. From my personal experience and the stories I have heard, Indian people are hard working people. The average working week is about 47 hours, with an average wage per month of € 120,94 (Dutch Consulate General, 2011).

3.3.6. Government

The Indian government realized that IT has the potential to influence extensive economic development in the country. To extract the maximum benefits from the outsourcing industry, the Indian government had to set up favorable policies. By adjusting these policies the government of India has seen beneficial growth in the ITO industry (Indobase).

To guarantee the growth of the IT market in India, Venture Capital Funding was introduced. This resulted in the creation of new software parks where opportunities are born for small companies but also for foreign investments (Indobase). With their knowledge of the Western laws and business practices they have an advantage compared to other attractive outsourcing countries (Sepehri, Baker, & Adams, 2009).

3.4. Measuring India

Every dimension has its own table below. All numbers, data and results in the tables are gathered and taken from various sources. When no answer could be found, an estimation was made based on literature and other sources (CIA, 2011), (Hofstede G. , 2011), (Indobase), (Rediff, 2009), (Times Of India, 2010), (NationMaster.com, 2005), (Dutch Consulate General, 2011) (Software Engineering Institute, 2012), (Cyranoski, Gilbert, Ledford, Nayar, & Yahia, 2011) (CheapTickets.nl, 2012).

Table 9: Measuring the dimension knowledge of India.

	Measuring element	Value	Score
KNOWLEDGE DIMENSION	**1. Skilled workforce**		
	- Employment rate (in %)	40,42%	0,50
	- Literacy (in %)	74.04%	0,00
			0,25
	2. Quantity of people		
	- Unemployment rate (in %)	59,58%	0,50
	- Population growth rate (in %)	1,3%	1,00
	- Life expectancy (in years)	64,7 years	0,50
	- Amount of IT graduates every year	550.000	1,00
			0,75
	3. Students and graduates		
	- Amount of universities	567	1,00
	- Amount of IT graduates every year	550.000	1,00
	- Amount of IT PhD graduates every year	8,900	1,00
			1,00
	4. Usage of CMMI		
	- Intensity of using CMMI	Yes	1,00
	- Companies with a score of 5 on CMMI	58	1,00
			1,00
	5. IT trainings		
	- IT trainings conducted	Training given	1,00
	- Certification in the IT sector	Certification is important	1,00
			1,00
			0,80

Table 10: Measuring the culture dimension of India.

	Measuring element	Value	Score
CULTURE DIMENSION	**1. Directness of communication**		
	- Power distance value (PDI)	77	0,50
			0,50
	2. Decision making		
	- Masculinity value (MAS)	56	0,50
			0,50
	3. Individual versus group		
	- Individualism value (IDV)	48	0,50
			0,50
	4. Time		
	- Masculinity value (MAS)	48	0,50
	- Uncertainty avoidance value (UAI)	40	0,50
			0,50
	5. Brain draining		
	- Long-term orientation value (LTO)	61	1,00
			1,00
			0,60

Table 11: Measuring the communication dimension of India.

	Measuring element	Value	Score
COMMUNICATION	**1. High availability**		
	- Time-difference (in hours)	4,5	1,00
	- Productive working hours per day	12,5	0,50
	- Overlapping hours for communication	4	0,50
			0,66
	2. Travel		
	- Travel time (in hours)	14	0,50
	- Travel costs (in €)	€ 945,-	1,00
			0,75
	3. Language		
	- English tongue	Native language	1,00
			1,00
			0,81

Table 12: Measuring the infrastructure dimension of India.

	Measuring element	Value	Score
INFRASTRUCTURE	**1. Internet**		
	- Internet speed (in mbps)	0,8 mbps	0,00
	- Broadband Internet connections (in %)	7,69%	0,00
	- Average Internet costs (in €)	€ 6,78	1,00
			0,33
	2. Power		
	- Power outages (in days in year)	67,15	0,00
	- Time of restoring an power outage (in minutes)	70	0,50
			0,25
	3. Telephone		
	- Telephone lines (in %)	3,02%	0,00
	- Mobile phone connections (in %)	57,23%	0,50
	- Mobile phone coverage	Good coverage	0,50
			0,33
			0,31

Table 13: Measuring the economy dimension of India.

	Measuring element	Value	Score
ECONOMY DIMENSION	**1. Labor costs**		
	- Average wage per month (in €)	€ 120,94	0,50
	- Average working week (in hours)	46,75	1,00
			0,75
	2. Unemployment rate		
	- Unemployment rate (in %)	59,58%	0,50
			0,50
	3. GDP growth		
	- GDP per capita (in €)	€ 1.300,-	0,50
	- GDP growth per year (in %)	7,8%	0,50
			0,50
	4. Investments		
	- Market shares of IT companies	Many investments	1,00
			1,00
			0,69

Table 14: Measuring the government dimension of India.

	Measuring element	Value	Score
GOVERNMENT DIMENSION	**1. Reducing licensing requirement**		
	- License requirements	Reduced licensing	0,50
	- Restrictions on investments	No restrictions	1,00
			0,75
	2. Promoting investment from outsiders		
	- Promoting of investments	Few promoting's	0,50
			0,50
	3. Transparent & investment friendly policies		
	- Investments possible from outsiders	Foreign investments are ok	1,00
	- Foreign establishments	Plenty of establishments	1,00
			1,00
	4. Venture Capital Funding		
	- Usage of software parks	Supported	1,00
	- Usage of Venture Capital Funding	Yes	1,00
	- Investments by the government in IT training	Investments by government	1,00
			1,00
	5. Western business practices		
	- Expertise in Western business practices	Experienced	1,00
	- Expertise in Western laws	Experienced	1,00
			1,00
	6. Censorship		
	- Openness of the government (censorship)	No censorship	1,00
			1,00
	7. Political stability		
	- Stability	Stable	1,00
			1,00
			0,89

3.5. Golden standard

Every dimension of India has been measured and the results are displayed in table 15. These results represent the ideal situation, or as stated in chapter 2.4, the golden standard. The golden standard originates from the popularity of India as outsourcing provider. The results of India are a goal for other countries, because of its raving success as outsourcing provider.

Table 15: Outcome of the model for India.

	Knowledge	Culture	Communication	Infrastructure	Economy	Government
India	0,80	0,60	0,81	0,31	0,69	0,89

These figures in table 15 are not as helpful when they are not visualized. A radar chart is effective when displaying data using multiple variables starting from the same point. It has the ability to immediately show the strongest and weakest points. The weakest dimensions are close to the center and strongest dimensions are at the outskirts of the chart. See for the results figure 11.

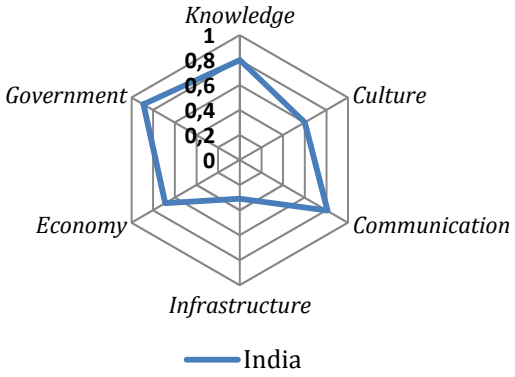


Figure 11: Radar chart for India.

The three dimensions that stand out in this radar chart are described below.

Government
The government dimension has received the highest score. India thanks its success due to many reasons, but the government definitely had huge influence on this. The government dimension could be important for the attractiveness of the outsourcing provider.

It definitely has positive influence on other dimensions, because the government eventually decides what is best for the country. So when the government dimension is strong, other dimensions will profit from this strength. This leads to a new hypothesis:

Hypothesis 3:
The government dimension is a starting point for improving other dimensions.

Communication
Communication is the second dimension that stands out. With the second highest score from all dimensions it shows that communication is critical in the outsourcing process. According to a survey from the Outsourcing Center, most outsourcing failures are due to problems in communication (Outsourcing Center, 2004).

Infrastructure
In contradiction to the two dimensions described above, infrastructure received the lowest score. With a score of only 0,31 they leave a 0,69 margin for improvements. We personally think that infrastructure is extremely important for communication purposes and a clear must-have in the information technology industry.

The model shows that, with the success of India, the need for a proper infrastructure is not required. It could mean that the infrastructure dimension is not that important. This leads to a new hypothesis:

Hypothesis 4:
The dimension infrastructure is of least importance.

As described above, the model shows that the infrastructure dimension is not of great importance for the attractiveness of the outsourcing provider. In this model all the dimensions have the same weight. The dimension infrastructure points out that the dimensions should include a weighting system.
For example, the dimension knowledge is definitely more important than the dimension infrastructure. India has an immense large pool of experienced and high-educated workforce that attracts more attention than for example the stability of the Internet connection. In general problems in infrastructure are easier and quicker to resolve than educating and finding a large pool of people with tremendous knowledge. This leads to a new hypothesis:

Hypothesis 5:
The dimensions should include a weighting system.

Validation

This chapter describes the validation and the reliability of the model. To validate the model we need a country that is close to the success of India. According to various sources China is the country closest to the success of India (A.T. Kearney, 2011).

These countries differ on many levels from each other and are both doing tremendously as outsourcing providers. This makes it an ideal country for validating the model.

At the end of this chapter the cosine similarity will be calculated between the results of India and China. When the result has a high similarity, the model is reliable because China is indeed successful. Our expectations are that the similarity will be high.

4.1. Validation-set

Below all the dimensions will be briefly handled. It exists of general information and personal experiences.

4.1.1. Knowledge

The educational system in China began with the birth of the Chinese civilization. It was normal for the parents to insure that the offspring got far better education than themselves. Many students were sent to other Western continents for educational programs and as of the 19th century China accepted the Western educational style.

Chinese are known for their lust and perseverance and only 4% is illiterate, with these large population numbers this is impressive.

"*If young people are interested in IT and are driven by their parents, they might start programming as early as elementary school, but usually they will begin between the ages of eight and twelve.*" - (Sahota, 2010).

"*The outsourcing provider is the first Chinese IT company to be listed on the New York Stock Exchange and that it is only a matter of time before more Chinese IT companies follow it. One of the reasons for this is the massive talent pool in China – every year we have millions of engineering graduates and this is something you won't find anywhere other than India.*" - (Sahota, 2010).

China has 35 official universities, which contribute to the upcoming problem in China (Dutch Consulate General, 2011). They cannot handle the enormous numbers of graduates every year; so many people are searching jobs across borders.

China is preparing the country for this mass pool of fresh graduates and work seeking people. This is visible in Chengdu, an upcoming IT capital, which has a lot of skeleton skyscrapers. These unfinished buildings stand out, when seeking for the reason people told me these buildings are government owned and are build to handle the huge blast of companies and people moving into Chengdu within a few years. This points out that they are long-term orientation thinkers.

4.1.2. Culture

Together with classmates we visited the game developing company Ubisoft in Chengdu. The manager told us he had to adjust his way of managing because the Western management style did not work that well. Western people always think that the Western way of management is the best management style. We are reluctant in following someone else's management style. The Chinese think that their management style is better and that results in conflicts on the work floor.

China has almost the same Power Distance Index level as India. While talking to IT business people, you will notice that most of the employees have never seen or even talked to their boss. This is hierarchal organized; the only one you should have contact with is the one just above you in the hierarchy.

The Chinese value their history; therefore as an outsourcer you should understand the Chinese history. Respect is one of the most intriguing and beautiful Chinese qualities. In Western countries respect goes out to successful people and achievements, while in China (also India, but in lesser extent) seniority and wisdom earns the respect.

> "*In the Chinese culture, IT is a prestigious discipline that reflects a high social status, and IT workers are financially well rewarded.*" - (Sahota, 2010).

China has a high value on the long-term orientation pillar compared to other countries. This was also noticeable in companies; they are long-term thinkers and rather play it safe. Whilst in the Western countries, like the Netherlands we take more risks.

4.1.3. Communication

The majority of China speaks Mandarin, but this is not the official language. Some regions have their own official language. Throughout the whole of China there are 292 languages (CIA, 2011).

Our group in Chengdu was blessed with two Chinese girls. One of these girls was from Shanghai and the other girl originated from Chengdu. She could do most of the translating. Most Chinese people don't speak English, let alone understand other Chinese people from other areas. The girl from Shanghai said it was very difficult to talk to people from Chengdu, because they talk a lot faster and with a different accent. This barrier is a difficult one to cross.

From my personal experience I can say that without a translator in China, it is very difficult to communicate. That is why the companies that we visited in Chengdu demand that their employees speak and write the English language.

China has a time difference of six hours compared to the Netherlands. This provides availability and working opportunities around the clock. To communicate you will have to employ people who speak English, this could form problems when those people are sick or quit their job.

4.1.4. Infrastructure

Telecommunication

The Chinese telecommunication sector saw a growth rate of about 20% between 1997 and 2002. This is the strongest and fastest growth in the world in this line of industry (Sautedé, 2002). With 294 million people using telephone landlines in China they are 1st on the world-ranking list and with an unbelievable 859 million people they are 1st on mobile telephone usage as well (CIA, 2011).

Internet
Estimations are that in 2013, China will have 718 million people who are using the Internet. That is roughly 53% of the total population of China. This will be an impressive growth if you look at the current statistics of 485 million Internet users, dated from June 2011 (East West Connect, 2011).

The censorship in China could form problems. During our visit in Chengdu, it was not possible to visit Google or Facebook. Therefore we had to use a workaround, a VPN connection, to visit these websites. These blockages can be an obstacle for work and communication channels with the offshoring branch.

China has a highly sophisticated communication market and is close to becoming the largest in the world. Internet remains a sensitive topic and has tight government restrictions on its content. This restrain of information affects the full potential of the Internet and limits companies in doing business. However, Internet usage is growing and opening up market potential for new products and services. This trend is set to continue as more businesses begin to rely on online trade.

Energy
China has the 2nd largest energy infrastructure in the world. The industry itself maintains high growth, but faces major bottlenecks. The industry lacks a national power transmission grid, and large areas are vulnerable when shortages appear (Dutch Consulate General, 2011).

Because of these absurd numbers in population and crowded capitals, power outages happen in China as well. Every summer for the past decade, China has had to endure power shortages in its most heavily industrialized provinces, as the use of air conditioning drove electricity consumption upward (BusinessWeek, 2011).

4.1.5. Economy

Since the late 1970s China has been a closed central planned system, but it changed to a market-oriented player. In 2010 it became the world largest exporter (CIA, 2011). Reforms were the starting phase away from the agriculture; it developed stock markets, rapid growth of the private sector and opening to foreign trade and investments (CIA, 2011).

The IT investments as a proportion of GDP are much lower than any other investments in China. Yet its contribution to the economic growth is almost half. It is safe to say that IT has become an important contributor to the growth of China's economy. Its rapid economic growth will in turn ensure a continued high demand for IT products and services (Wong, 2004).

The Chinese have an average working week of 36,25 hours. For these hours they receive an average wage of € 243,67 per month (Dutch Consulate General, 2011).

4.1.6. Government

By opening up to foreign markets, China has showed beneficial growth in the outsourcing industry. The use of Venture Capital Funding is less strong compared to India, but the use of software parks is tremendous. These parks promote and offer space for establishment to Western companies.

The weakness of China is the lack of expertise in the Western laws and business practices (Sepehri, Baker, & Adams, 2009).

4.2. Measuring China

Every dimension has its own table below. All numbers, data and results in the tables are gathered and taken from various sources. When no answer could be found, an estimation was made based on literature and other sources (CIA, 2011), (CheapTickets.nl, 2012), (Dutch Consulate General, 2011), (China.com, 2012), (Cyranoski, Gilbert, Ledford, Nayar, & Yahia, 2011), (Lee & Aldred, 2012).

Table 16: Measuring the knowledge dimension of China.

	Measuring element	Value	Score
KNOWLEDGE DIMENSION	**1. Skilled workforce**		
	- Employment rate (in %)	59,09%	0,50
	- Literacy (in %)	94,3%	1,00
			0,75
	2. Quantity of people		
	- Unemployment rate (in %)	40,91%	0,50
	- Population growth rate (in %)	0,49%	0,50
	- Life expectancy (in years)	73,7 years	1,00
	- Amount of IT graduates every year	500.000	1,00
			0,50
	3. Students and graduates		
	- Amount of universities	108	1,00
	- Amount of IT graduates every year	500.000	1,00
	- Amount of IT PhD graduates every year	50,000	1,00
			1,00
	4. Usage of CMM		
	- Intensity of using CMM	Yes	1,00
	- Companies with a score of 5 on CMM	16	0,50
			0,75
	5. IT trainings		
	- IT trainings conducted	Training given	1,00
	- Certification in the IT sector	Certification is important	1,00
			1,00
			0,60

Table 17: Measuring the culture dimension of China.

	Measuring element	Value	Score
CULTURE DIMENSION	**1. Directness of communication**		
	- Power distance value (PDI)	80	0,00
			0,00
	2. Decision making		
	- Masculinity value (MAS)	66	0,50
			0,50
	3. Individual versus group		
	- Individualism value (IDV)	20	0,00
			0,00
	4. Time		
	- Masculinity value (MAS)	66	0,50
	- Uncertainty avoidance value (UAI)	40	0,50
			0,50
	5. Brain draining		
	- Long-term orientation value (LTO)	118	1,00
			1,00
			0,40

Table 18: Measuring the communication dimension of China.

	Measuring element	Value	Score
COMMUNICATION	**1. High availability**		
	- Time-difference (in hours)	6	1,00
	- Productive working hours per day	14	1,00
	- Overlapping hours for communication	2	0,00
			0,66
	2. Travel		
	- Travel time (in hours)	20,5	0,00
	- Travel costs (in €)	€ 716,-	1,00
			0,50
	3. Language		
	- English	No	0,00
			0,00
			0,39

Table 19: Measuring the infrastructure dimension of China.

	Measuring element	Value	Score
INFRASTRUCTURE	**1. Internet**		
	- Internet speed (in mbps)	1,4 mbps	0,50
	- Broadband Internet connections (in %)	33,81%	0,00
	- Average Internet costs (in €)	€ 9,75	1,00
			0,50
	2. Power		
	- Power outages (in days in year)	55	0,00
	- Time of restoring an power outage (in minutes)	60	0,50
			0,25
	3. Telephone		
	- Telephone lines (in %)	22,02%	0,00
	- Mobile phone connections (in %)	62,59%	0,50
	- Mobile phone coverage	Good coverage	1,00
			0,50
			0,42

Table 20: Measuring the economy dimension of China.

	Measuring element	Value	Score
ECONOMY DIMENSION	**1. Labor costs**		
	- Average wage per month (in €)	€ 243,67	0,00
	- Average working week (in hours)	36,25	0,50
			0,25
	2. Unemployment rate		
	- Unemployment rate (in %)	40,91%	0,50
			0,50
	3. GDP growth		
	- GDP per capita (in €)	€ 4.400,-	1,00
	- GDP growth per year (in %)	9,5%	0,50
			0,75
	4. Investments		
	- Market shares of IT companies	Few investments	0,50
			0,50
			0,50

Table 21: Measuring the government dimension of China.

	Measuring element	Value	Score
GOVERNMENT DIMENSION	**1. Reducing licensing requirement**		
	- License requirements	Reduced licensing	0,50
	- Restrictions on investments	Few restrictions	0,50
			0,50
	2. Promoting investment from outsiders		
	- Promoting of investments	Few promoting's	0,50
			0,50
	3. Transparent & investment friendly policies		
	- Investments possible from outsiders	Foreign investments are ok	1,00
	- Foreign establishments	Plenty of establishments	1,00
			1,00
	4. Venture Capital Funding		
	- Usage of software parks	Supported	1,00
	- Usage of Venture Capital Funding	Yes	1,00
	- Investments by the government in IT training	Investments on a small scale	0,50
			0,83
	5. Western business practices		
	- Expertise in Western business practices	Expertise	0,50
	- Expertise in Western laws	Expertise	0,50
			0,50
	6. Censorship		
	- Openness of the government (censorship)	Censorship	0,00
			0,00
	7. Political stability		
	- Stability	Stable	1,00
			1,00
			0,62

4.3. Similarity

The cosine similarity is a measure of similarity between two vectors; in this case the vectors of India and China. We are going to measure the cosine of the angle between these two vectors. When those vectors point in the same direction, the vectors are similar. But when the angle is totally different, that means the two vectors are nothing alike.

Search engines are using this method for text mining (Steinbach, Karypis, & Kumar, 2000). The similarity can be measured by the Euclidean dot product; this results in the following equation:

$$a \cdot b = \| a \| \| b \| cos\theta$$

$$similarity = \cos(\theta) = \frac{A \cdot B}{\| A \| \| B \|} = \frac{\sum_{i=1}^{n} A_i \times B_i}{\sqrt{\sum_{i=1}^{n} (A_i)^2} \times \sqrt{\sum_{i=1}^{n} (B_i)^2}}$$

This chapter will calculate the similarity between India and China. Our expectations are high similarity because both countries are successful outsourcing providers. If the similarity is indeed high, the model is validated. In table 22 the results from this and the previous chapter are combined.

Table 22: Outcome of the model for India and China.

	Knowledge	Culture	Communication	Infrastructure	Economy	Government
India	0,80	0,60	0,81	0,31	0,69	0,89
China	0,60	0,40	0,39	0,42	0,50	0,62

With the use of the equation above we are going to calculate the similarity.

$$India \cdot China = 0{,}80 \times 0{,}60 + 0{,}60 \times 0{,}40 + 0{,}81 \times 0{,}39 + 0{,}31 \times 0{,}42 + 0{,}69 \times 0{,}50 + 0{,}89 \times 0{,}62$$

$$\| India \| = \sqrt{0{,}80^2 + 0{,}60^2 + 0{,}81^2 + 0{,}31^2 + 0{,}69^2 + 0{,}89^2} = 1{,}7379298$$

$$\| China \| = \sqrt{0{,}60^2 + 0{,}40^2 + 0{,}39^2 + 0{,}42^2 + 0{,}50^2 + 0{,}62^2} = 1{,}21774382$$

$$sim(India, China) = \frac{2{,}0629}{1{,}7379298 \times 1{,}21774382} = \mathbf{0,97}$$

First we used the model to measure India that is representing the golden standard. To achieve high attractiveness, they should score a high similarity with the golden standard. The higher the similarity, the more similar these vectors are. Now China has been measured with the model and the similarity between China and the golden standard are calculated.

India and China have a cosine similarity of *0,97*, which is a high cosine similarity. When the similarity is exactly 1, the vectors are exactly the same. From this result we formed a hypothesis:

Hypothesis 6:

If a country has a high cosine similarity with the golden standard, it has all the characteristics to be a successful outsourcing provider.

This hypothesis shows that when the similarity with the golden standard is high, it has all the characteristics to be a successful outsourcing country. In the first chapter we described a sub-question that we had to define attractiveness. With the hypothesis above we can conclude the following:

Lemma 1:

A country is an attractive outsourcing provider when it has a high cosine similarity with the golden standard.

In chapter 3.5, the results of India were put into a radar chart to easily spot the weaknesses and strengths. Now we put the outcome of China in that same chart, to see what the differences are between China and the golden standard. The cosine similarity showed that it is very similar, so now we are able to visualize this similarity.

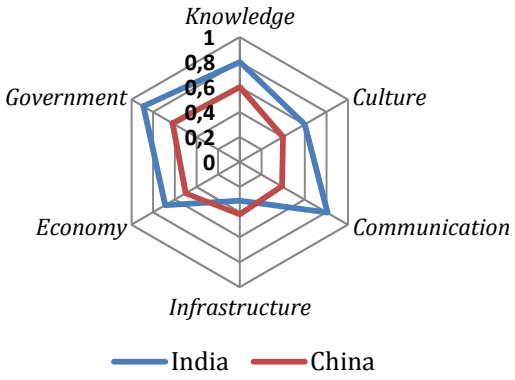


Figure 12: Radar chart with measurements of India and China.

Noteworthy is that China's infrastructure dimension has a greater score than the golden standard and that China has no real peaks in the radar chart. These radar charts help to see which dimensions need improvement. The next chapter is about discovering the causal relationships between the dimensions and how we can use these relationships to improve the weakest dimensions.

Causality

The proposed model shows a different approach to measure the attractiveness of a country. The results from the model show the strengths and weaknesses. This chapter explains the relationships between the six dimensions.

The target is to look for methods to improve the weaknesses that become visible when measuring a country. This can be achieved by visualizing the causal relationships between the dimensions in system dynamic diagrams. These diagrams show which dimension influences other dimensions and whether this has a positive or negative influence.

5.1. Causal relationships

The model has six separate dimensions. As shown in chapter 3.2.2, each of those dimensions has its own measuring element. This model is kept basic; there are possibly dozens of measuring elements in each dimension. This thesis shows the architecture of the model, the functioning of the model stays the same.

Causality is the relationship between two dimensions. The second dimension is influenced as a consequence of the first. So when the first dimension improves and it has a causal relation with the second dimension, that dimension gets influenced by that process.

5.1.1. Knowledge

The relationships for the knowledge dimension have been put in a system dynamics diagram (figure 13). This dimension is closely related to the economy dimension. When 'students and graduates' increase, the 'skilled workforce' will be positively influenced. The result of this influence is a boost for the economy dimension.

Since 'skilled workforce' originates from universities and other educational systems, the communication between foreign customers is likely to improve. This explains the relation with the communication dimension.

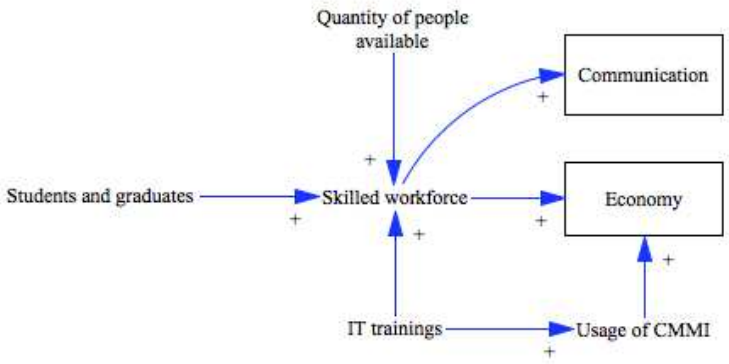


Figure 13: Relations in the knowledge dimension.

5.1.2. Culture

Throughout this research it becomes clear that culture is important in outsourcing. Figure 14 shows this importance, it has influence on no less than four different dimensions. Many other papers have written about the dangers of underestimating the influence of culture (Kvedaraviciene & Boguslauskas, 2010).

The culture dimension has an important causal relationship with the government dimension. When the culture is oriented on a long-term basis, the country will definitely invest in the strengths of IT. China has experienced a significant economic growth because of outsourcing (Xiao, Yu, & Gao, 2010). Hence the influence of 'interpretation of time' on the government dimension directly reflects on the other dimensions.

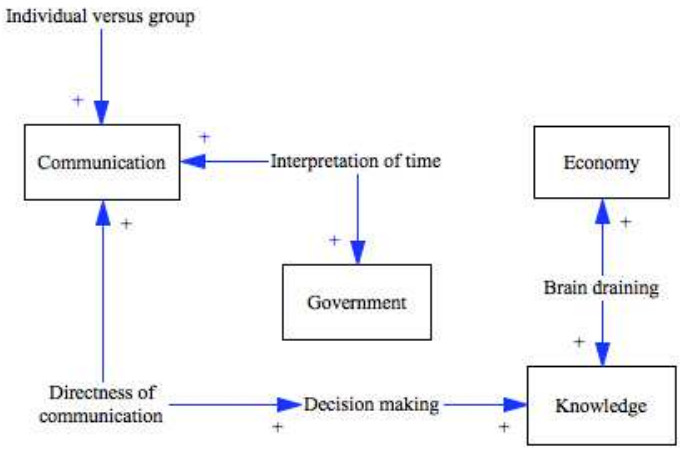


Figure 14: Relations in the culture dimension.

On the other hand, the communication dimension stands out from the rest. Three measuring elements are positively influencing the communication dimension. Once again, this shows that culture plays a huge role in outsourcing. Of all the cultural aspects, as described in chapter 3.1.3, communication problems are the most frequent reason why outsourcing fails.

The measuring element 'brain draining' is influencing the economy and knowledge dimensions. When educated people leave the country it will have a negative influence on these dimensions. The model is positively orientated; as such that 'brain draining' has a positive influence when people are not looking for jobs across borders. This improves the economy of the outsourcing provider, the unemployment rate decreases and the GDP growth increases.

5.1.3. Communication

The communication dimension has a direct causal relationship with the economy dimension. This dimension contributes a lot to the attractiveness of the country, but does not influence other dimensions.

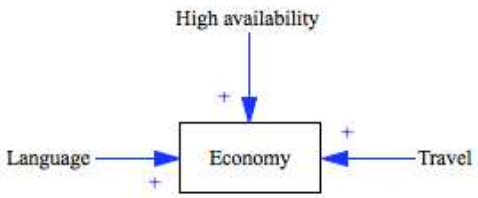


Figure 15: Relations in the communication dimension.

All measuring elements are pointing towards the economy dimension, when the measuring elements are improving it will contribute to the attractiveness. An attractive communication dimension indirectly boosts foreign investments and has a positive influence on the economy.

5.1.4. Infrastructure

In all previous dimensions there was a causal relationship with the communication dimension. As shown in figure 16, we see that the infrastructure dimension has a relationship with the communication dimension as well. This time it is influenced by all three measuring elements.

The railway-, road- and water-infrastructure have been omitted; these are not of critical importance for outsourcing. The power infrastructure has a strong and close relationship with the economy dimension. Researches have been conducted and news articles have been written about the loss of money when there is a power outage (chapter 3.1.4).

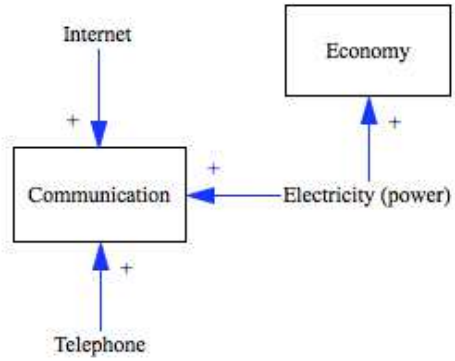


Figure 16: Relations in the infrastructure dimension.

5.1.5. Economy

Plenty of researches have shown that outsourcing gives a boost to the economy of the outsourcing provider (chapter 3.1.5).

In the system dynamics diagram below, figure 17, the first negative influence is present. When the GDP growth increases it also increases the wages. In the model it is defined that lower wages are more attractive, therefore the GDP growth negatively influences 'labor costs'.

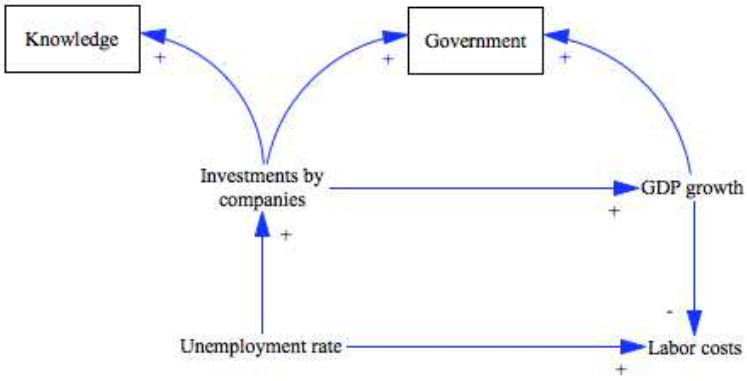


Figure 17: Relations in the economy dimension.

'Investments by companies' will positively influence the knowledge and government dimensions. The knowledge dimension will improve when foreign companies are outsourcing and the government dimension is influenced when these foreign investments are established.

5.1.6. Government

The culture dimension is not the only dimension that is being underestimated; the government dimension is being underestimated as well. In chapter 3.1.1, we stated that the knowledge dimension is probably the most important dimension. When looking more carefully at figures 13-18 we find that the government dimension is perhaps the most important one.

The government dimension exists mainly out of policies that help the outsourcing business in a country. These policies are proven to be important and crucial for the outsourcing world. Besides these policies there is the measuring element 'censorship' that is considered a risk. When the censorship decreases, it has a positive influence on communication between countries and on the infrastructure dimension. Venture Capital Funding has four outgoing influences; the use of software parks creates a lot of new traffic. It influences the knowledge dimension and increases the capacity of the infrastructure.

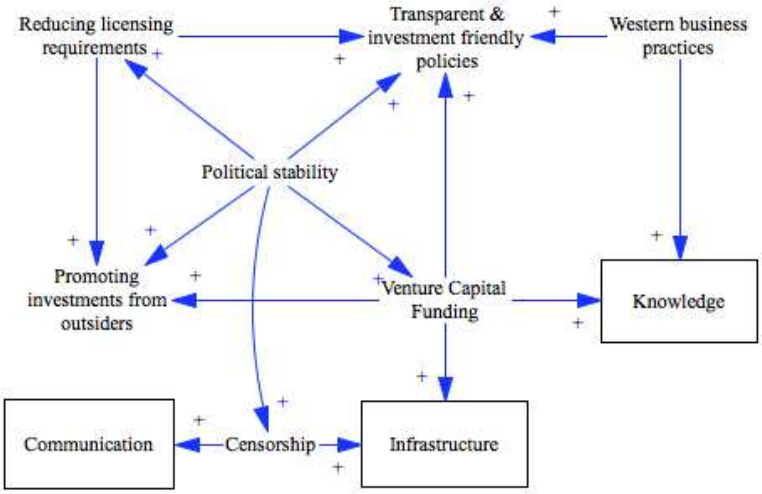


Figure 18: Relations in the government dimension.

As visible in the diagram above, the measuring element 'political stability' is important. It influences five other measuring elements. The measuring element of 'western business practices' is considered equally important, but it has less influence than 'political stability'.

In chapter 3.5 a hypothesis was drafted, the dimensions should have a weighting attached. In this diagram it is visible that some of the measuring elements have a stronger weight than others, so that existing hypothesis should be extended.

Hypothesis 5:

The dimensions and their measuring elements should include a weighting system.

5.1.7. Overview

All six dimensions have been handled separately and showed their inner and outer relationships. All relationships pointing to a specific dimension have been gathered and displayed in an overview system dynamic diagram (figure 19).

In this figure all the causal relationships are displayed. All the important and remarkable relationships are described below. In the figure below you see that the dimension government and the dimension economy play the biggest roles. They are the starting and ending point of the diagram.

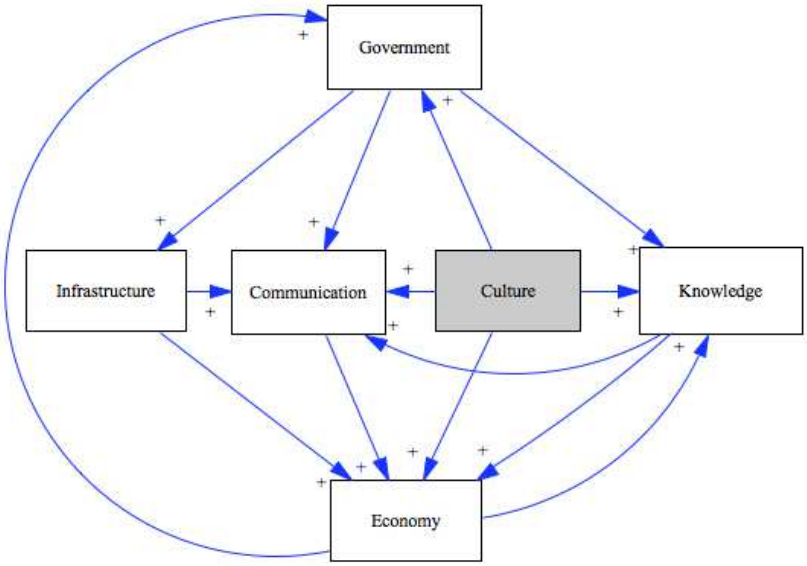


Figure 19: Causal relationships between the dimensions.

Clearly the government and economy dimensions are the main dimensions of influence. As seen in the figure above it is particularly important to make sure that the government dimension will be improved. This will lead to a more positive influence on the rest of the dimensions.

The communication dimension receives positive influences from four other dimensions. The communication dimension has been selected as very important. It contributes to the total image of attractiveness for a particular country.

Every dimension has directly influenced the economy dimension, except for the government dimension. But the government dimension influences all dimensions except for the economy dimension. This confirms *hypothesis 3* that is stated in chapter 3.5.

All six dimensions have several causal relationships, but the only two-way relation exists between the knowledge and economy dimensions.

The culture dimension is different from the other dimensions. This dimension only influences other dimensions, but cannot be influenced itself. The culture of a country is unlikely to change, therefore it has been given a different background color (figure 19).

Culture has an effect on other dimensions and plays a key role in outsourcing (Kvedaraviciene & Boguslauskas, 2010). In the previous figure it was clear that the government and economy

dimensions have the major roles in the causal relationships. But the uniqueness of the culture dimension is displayed in the figure below.

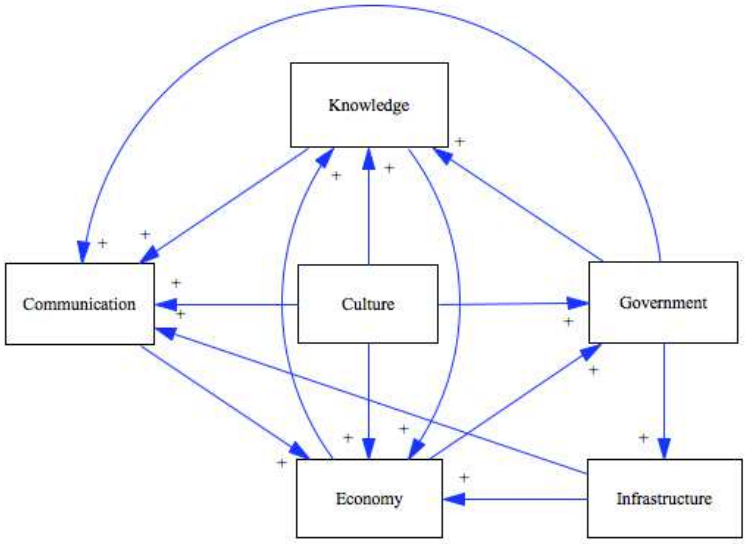


Figure 20: Uniqueness of the culture dimension.

Hypothesis 2 in chapter 3.2 suggested that culture cannot be left out when measuring the attractiveness of a country. In figure 20, it is visible that the culture dimension influences four different dimensions. This confirms that culture indeed plays a huge role in outsourcing.

Lemma 2:

Culture is critical for outsourcing because it cannot be influenced.

This conclusion confirms that it was important to add culture to the model. In the previous chapter we talked about spotting the weaknesses and improving them. With the use of these causal relationships we show how dimensions improve over time.

5.2. Improvement strategy

System dynamics is an approach to understand the behavior of a very complex system. There are advanced system dynamics that are able to show the behavior over time. The focus of this sub chapter will be finding improvement strategies with the use of internal feedback loops.

There are loops that have to be discovered to come up with an improvement strategy:

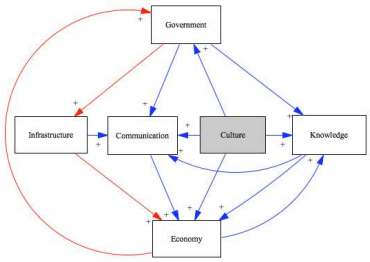
- **Reinforcement loops**, which create a positive spiral. *A* influences *B* and *B* influences *A*. This creates a reinforcement loop.
- **Balancing loops**, which create a negative reinforcement. In other words, growth cannot continue because they work against each other. *A* influences *B* and *B* negatively influences *A*.

In this model the reinforcement loop is the only loop that will be highlighted. The model is based on improvements and not on negative influences. That means that all measuring elements are scored on success and not on failure and thus balancing loops are not integrated in these system dynamics diagrams.

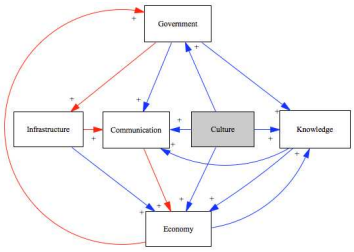
Discovering reinforcement loops is the goal of this chapter. In reality these reinforcement loops take a lot of time before they have effect.

Government – Infrastructure – (Communication) – Economy

The reinforcement loops are described from left to right. The first loop that appears is a triangle relation between the dimensions government, infrastructure and economy.



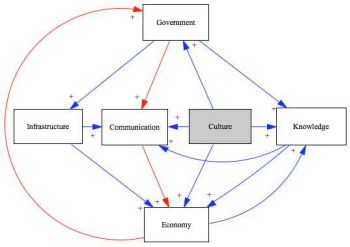
As described in the previous chapter, the government dimension is considered a good starting point. In this case it shows that it is indeed the easiest starting point. It could actually start anywhere, either from government, infrastructure or economy dimension. However, the economy dimension as a starting point is unlikely.



The second reinforcement loop is part of the loop described above. Instead of going directly from the infrastructure to the economy dimension it has an intermediate step. The infrastructure dimension is influencing the communication dimension. Consequently another reinforcement loop is formed by going from the government, to the infrastructure, to the communication and finally to the economy dimension.

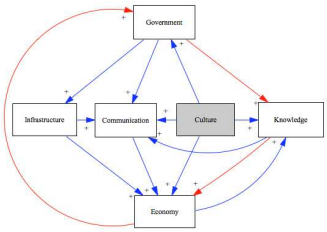
Government – Communication – Economy

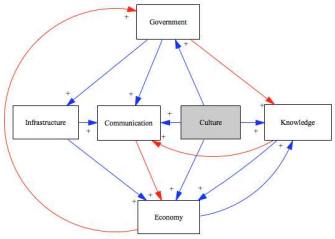
The third reinforcement loop is a triangle relation between the dimensions government, communication and economy. Again there is the starting point from the government dimension and end goal to improve the economy dimension.



Government – Knowledge – (Communication) – Economy

The fourth reinforcement loop contains a triangle relation between the dimensions government, knowledge and economy. All loops are discussed from left to right; the culture dimension is skipped because it only influences other dimensions and therefore it is not possible to participate in a reinforcement loop.





With the causal relation between the knowledge and the communication dimension a fifth reinforcement loop exists. This relation goes from the government, to the knowledge, to the communication and then to the economy dimension.

In chapter 5.1.7 we noticed the following things:

- Every dimension, except for the economy dimension, is influenced by the government dimension;
- Every dimension, except for the government dimension, is influencing the economy dimension.

All the above reinforcement loops have a starting point from the government dimension. This confirms *hypothesis 3* stated in chapter 3.5. The government dimension is indeed a starting point for improving other dimensions. Thus the following conclusion is made:

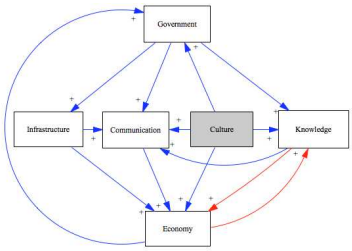
Lemma 3:

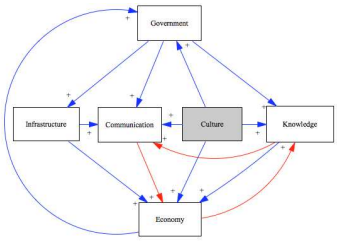
Government is a dominant factor for improving the economy.

Knowledge – (Communication) – Economy

The final two reinforcement loops are established between the dimensions knowledge and economy with an intermediate step to the communication dimension. In all reinforcement loops the economy dimension is present.

This clearly points out that the economy dimension is continuously being influenced and that the outsourcing dimension indeed means a growing economy in your country (Xiao, Yu, & Gao, 2010). This strengthens *lemma 3* that is described above.





5.2.1. Policies

One of the sub-questions is: *What policies can improve the attractiveness?*

The attractiveness can be improved by reinforcement loops, so the policies described in this question are referring to those loops defined in the previous chapter. With all seven reinforcement loops defined we can count the presence of each dimension in these loops (table 23).

Table 23: Amount that a dimension occurs in the reinforcement loops.

Knowledge	Culture	Communication	Infrastructure	Economy	Government
4	0	4	2	7	5

Culture stands out not being part of any reinforcement loop, which is in line with *lemma 2*. The government dimension is present in five of the seven reinforcement loops. This strengthens *lemma 3*.

The infrastructure dimension occurs in only two reinforcement loops. The infrastructure dimension is, according to this model with the chosen golden standard, of least importance. This confirms our *hypothesis 4* stated in chapter 3.5.

Since India did not score very high on the infrastructure dimension, we stated that infrastructure is not very important. The causal relationships show that this dimension is not that big of an influence. This could be defined with weighting; it shows that *hypothesis 5* stated in chapter 5.1.6 could be interesting for future research.

To take advantage of the known reinforcement loops, there has to be a trigger somewhere. The first trigger is the knowledge dimension; this trigger will improve the communication and economy dimensions over time. When the knowledge dimension has improved, the second investment should be on the government dimension. The dimensions infrastructure, communication and knowledge are automatically triggered.

From those two dimensions everything is set in motion. The following loops apply:

- *Government* – Infrastructure – Economy
- *Government* – Infrastructure – Communication Economy
- *Government* – Communication – Economy
- *Government* – Knowledge – Economy
- *Government* – Knowledge – Communication Economy

- *Knowledge* – Economy
- *Knowledge* – Communication – Economy

All the loops start with either the government or the knowledge dimension. These two dimensions are of critical importance for outsourcing. This leads to a new conclusion:

Lemma 4:

Improving the knowledge and government dimension is a catalyst for the attractiveness.

Prediction

The final step in the research method defines the prediction-set. The model validated because the measurements of China have a very high similarity to the golden standard. For the prediction-set the country Zambia has been chosen.

Zambia currently has three major universities and is experiencing big growth on educational level. Therefore more universities are established to handle this growth, you can say it's being lifted to a higher level. With the help of other countries they are currently investing in a more solid and up-to-date IT infrastructure network to establish the communication with the rest of the country and the world (Jameson, 2006).

The goal of this chapter is to look at the attractiveness of Zambia for being an outsourcing provider.

6.1. Prediction-set

All dimensions will be briefly discussed below. It is filled with general information and is complemented by personal experiences. Zambia is a very inspiring country and it could be interesting to see what the current state of the country is.

6.1.1. Knowledge

The educational system in Zambia improved rapidly in the previous years. Not only the primary schools but also the higher education. The literate percentage of Zambia is around 71% and rising because of the improving situation of Zambia (CIA, 2011).

Last year some colleges have been turned into a university to handle the large amounts of new students. I've visited COSETCO, a relative new university, in Zambia, but the campus is far from comparable to the university where I was stationed for over two months. My voluntary work in Zambia was to support the installation of a new student information system. There is a desperate need for digitalization, because with that many students and the growth of the universities they can no longer cope with the vast amounts of paperwork. It was clear to me that the educational system is evolving.

One thing I really liked in Zambia was that it's obligated to get certified as an IT professional with a certificate, the Computer Society of Zambia. In the Netherlands we have a similar organization called EXIN (EXIN, 2012). Every year you have to refresh this certificate, so your future employer can see that you are still active in the field and you truly have a degree in information technology.

6.1.2. Culture

Zambia is a totally different story compared to India and China. For one it is shocking to see that in Zambia a lot of people are still living in houses made of straw. When you see this you really have the feeling of being in the heart of Africa. But when you get closer to the urban areas things are turning around.

Geographically wise, Zambia is about seventeen times bigger compared to the Netherlands, but still they have only fourteen million people (CIA, 2011). The three major cities Lusaka, Ndola and Kitwe they take up most of the people in Zambia. The rest of the country exists of people and tribes living in small villages. The current government is trying to put a stop on these tribes, because these people are not contributing to change in the country.

Zambia is culturally very diverse so it is difficult to generalize. However, for the reader to understand the context of the research I will briefly outline the differences between the Zambian and Dutch culture.

One characteristic cultural value is the importance of hierarchy. At the university where I worked this was very important, they take their own role very seriously and will follow any given command by their superiors in the chain. You see that in Zambia a group feeling is very important, while in the Netherlands you see that independence dominates (Hofstede G. , 2011).

I will never forget that it is very difficult to make appointments and/or agreements with Zambians. They are not committed to the clock, which means that sometimes you have to wait a bit longer than agreed on. This does not mean that they are lazy or do not have a sense of responsibility, but they take life easy and relax.

Zambia has a very low value on the Long Term Orientation pillar compared to the other countries (Hofstede G. , 2011). What I noticed is that most Zambians think that quick money is good money. Instead of thinking ahead they are living by the day.

6.1.3. Communication

Zambia is a lot smaller compared to India and China. They still have 73 active languages (CIA, 2011). These languages originate from all the villages throughout the country. The Northern region speaks Bemba and the Southern region speaks Nyanja, but the official language of Zambia is English.

When outsourcing to a country like Zambia, communication should run smoothly because everyone speaks English. At least in the urban areas, perhaps some elderly people from villages can't speak English.

Compared to India and China, Zambia doesn't have a time-difference advantage. The huge advantage on the other hand is that everybody speaks English. The main problem here is the stability of the Internet and electricity.

6.1.4. Infrastructure

Telecommunication
It's typical to see that the telephone landlines aren't used that much in Zambia. With 90,100 people they are 148th on the world-ranking list. A number of 4.9 million people are using mobile phones, which makes Zambia the 101st on the world ranking list (CIA, 2011). Zambia has a total population of 14.3 million people, this means that 34% of the population carries a mobile phone.

Internet
The Internet in Zambia is still a vulnerable point. Until 2009 all Internet and voice services to and from Zambia were carried over satellite. Whilst relatively reliable, the cost of satellite capacity is high and satellites are far enough out in space to add delay to services such as web browsing, voice or video (AfriConnect Zambia Limited, 2011).

Since 2010 all normal international links are transmitted via optic fiber cables. However, these satellite circuits are kept online and available just for back up. These optic fiber cables connect Lusaka, the capital of Zambia, with London. The latency of these cables (time taken for data to reach Europe and return) is now under a quarter of a second. They also connected Zambia to South Africa and got the latency just as low as a tenth of a second (AfriConnect Zambia Limited, 2011).

The cost of connectivity in Zambia will never be as low as it is in Europe as the closest point to which a connection can be made to the worldwide internet is 9.000km away. In addition 'last mile' delivery to the client site has to be via sophisticated (imported) wireless equipment, or fiber optic cable. However, with the arrival of more fiber links into the country in the near future it is likely that prices will go down significantly, and growing bandwidth demands are met. Location is not the barrier that it once was, and Zambia is able to compete with a world standard.

Energy
Zambia is endowed with a relatively large amount of cost-effective hydropower. In terms of electricity supply, Zambia enjoys a much more favorable position than many of its neighbors. A challenge in Zambia is that only 20% of the people in Zambia have access to electricity (Foster & Dominguez, 2010). One of the most remarkable things I saw was pre-paid power.

Especially during the rain season in Zambia power outages happen frequently. Most of the time it is restored within one hour. This is purely because of bad infrastructure and not of mass people that are using power like in India and China.

6.1.5. Economy

With a GDP growth of 6% per year, the economy of Zambia experienced a strong growth over the last few years. Their biggest moneymakers are the copper-mines, which result in plenty of jobs and export. The copper output has increased steadily since 2004, due to higher copper prices and foreign investment (CIA, 2011).

Poverty remains a significant problem in Zambia, despite a stronger economy. Zambia's dependency on copper makes it vulnerable to depressed commodity prices, but record high copper prices and a bumper maize crop in 2010 helped Zambia rebound quickly from the world economic slowdown that began in 2008 (CIA, 2011).

However, the high birth rate, relatively high HIV/AIDS burden, and market distorting agricultural policies meant that Zambia's economic growth has not dramatically decreased the stubbornly high poverty rates (CIA, 2011).

6.1.6. Government

Zambia has been adjusting the government policies to see growth in their industry. Namely the mining industry is being opened up for foreign investments. This causes the big growth in their economy at the moment (CIA, 2011).

Zambia is still emerging in the IT industry, so there are no projects like Venture Capital Funding and as a result Zambia has no software parks. An advantage is that they have knowledge in Western laws although for business practices they rather have external parties.

6.2. Measuring Zambia

In this chapter all six dimensions are measured, for every dimension there is a table with the measuring element and their measurable items. The following numbers, data and results in the tables below are gathered and taken from different sources. When necessary there have been made an estimation based on the found sources (CIA, 2011), (UNICEF, 2012), (CheapTickets.nl, 2012), (NationMaster.com, 2005), (This is Total Essex, 2010), (Encyclopedia of the Nations), (Netherlands Embassy, 2012), (Daily bloggr, 2010).

Table 24: Measuring the knowledge dimension of Zambia.

	Measuring element	Value	Score
KNOWLEDGE DIMENSION	**1. Skilled workforce**		
	- Employment rate (in %)	86%	1,00
	- Literacy (in %)	71%	0,00
			0,50
	2. Quantity of people		
	- Unemployment rate (in %)	14%	0,50
	- Population growth rate (in %)	3,10%	1,00
	- Life expectancy (in years)	49 years	0,00
	- Amount of IT graduates every year	250	0,00
			0,38
	3. Students and graduates		
	- Amount of universities	12	0,50
	- Amount of IT graduates every year	250	0,00
	- Amount of IT PhD graduates every year	0	0,00
			0,17
	4. Usage of CMM		
	- Intensity of using CMM	No	0,00
	- Companies with a score of 5 on CMM	0	0,00
			0,00
	5. IT trainings		
	- IT trainings conducted	Training on low level	0,00
	- Certification in the IT sector	Certification is important	1,00
			0,50
			0,31

Table 25: Measuring the culture dimension of Zambia.

	Measuring element	Value	Score
CULTURE DIMENSION	**1. Directness of communication**		
	- Power distance value (PDI)	64	0,50
			0,50
	2. Decision making		
	- Masculinity value (MAS)	41	0,50
			0,50
	3. Individual versus group		
	- Individualism value (IDV)	27	0,50
			0,50
	4. Time		
	- Masculinity value (MAS)	41	0,50
	- Uncertainty avoidance value (UAI)	52	1,00
			0,75
	5. Brain draining		
	- Long-term orientation value (LTO)	25	0,00
			0,00
			0,45

Table 26: Measuring the communication dimension of Zambia.

	Measuring element	Value	Score
COMMUNICATION	**1. High availability**		
	- Time-difference (in hours)	1	0,50
	- Productive working hours per day	9	0,50
	- Overlapping hours for communication	7	1,00
			0,67
	2. Travel		
	- Travel time (in hours)	12	0,50
	- Travel costs (in €)	€ 932,-	1,00
			0,75
	3. Language		
	- English	Native language	1,00
			1,00
			0,81

Table 27: Measuring the infrastructure dimension of Zambia.

	Measuring element	Value	Score
INFRASTRUCTURE	**1. Internet**		
	- Internet speed (in mbps)	0,46 mbps	0,00
	- Broadband Internet connections (in %)	5,70%	0,00
	- Average Internet costs (in €)	€ 68,43	0,00
			0,00
	2. Power		
	- Power outages (in days in year)	30	0,00
	- Time of restoring an power outage (in minutes)	60	0,00
			0,00
	3. Telephone		
	- Telephone lines (in %)	0,63%	0,00
	- Mobile phone connections (in %)	34,57%	0,00
	- Mobile phone coverage	Good coverage	1,00
			0,33
			0,11

Table 28: Measuring the economy dimension of Zambia.

	Measuring element	Value	Score
ECONOMY DIMENSION	**1. Labor costs**		
	- Average wage per month (in €)	€ 230,99	0,00
	- Average working week (in hours)	45	1,00
			0,50
	2. Unemployment rate		
	- Unemployment rate (in %)	14%	0,50
			0,50
	3. GDP growth		
	- GDP per capita (in €)	€ 1.600,-	0,50
	- GDP growth per year (in %)	6,7%	0,50
			0,50
	4. Investments		
	- Market shares of IT companies	Almost none	0,00
			0,00
			0,38

Table 29: Measuring the government dimension of Zambia.

	Measuring element	Value	Score
GOVERNMENT DIMENSION	**1. Reducing licensing requirement**		
	- License requirements	Reduced licensing	0,50
	- Restrictions on investments	Few restrictions	0,50
			0,50
	2. Promoting investment from outsiders		
	- Promoting of investments	Few promoting's	0,50
			0,50
	3. Transparent & investment friendly policies		
	- Investments possible from outsiders	Foreign investments	1,00
	- Foreign establishments	Very little	0,00
			0,50
	4. Venture Capital Funding		
	- Usage of software parks	No software parks	0,00
	- Usage of Venture Capital Funding	No use of VCF	0,00
	- Investments by the government in IT training	Investments on a small scale	0,50
			0,17
	5. Western business practices		
	- Expertise in Western business practices	No expertise	0,00
	- Expertise in Western laws	Little expertise	0,50
			0,25
	6. Censorship		
	- Openness of the government (censorship)	No censorship	1,00
			1,00
	7. Political stability		
	- Stability	Has problems	0,50
			0,50
			0,49

6.3. Attractiveness

Gradually new data is added to the radar chart, the first chart was introduced in chapter 3.5. The same data still exists in the chart below. The outcome from India represents the golden standard and in the meantime the results of China have been added and now the results from the previous chapter, Zambia, are added.

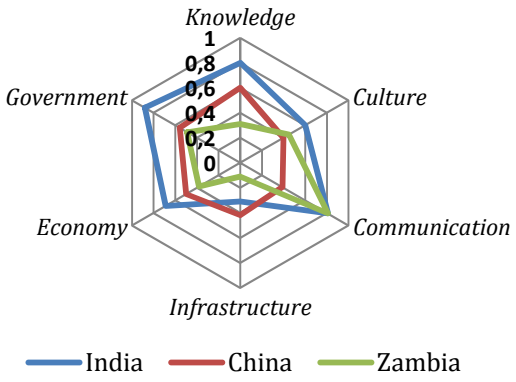


Figure 21: Radar chart with measurements of India, China and Zambia.

In figure 21 you immediately see that India has a better overall score than China and Zambia. This is logical because India represents the golden standard. What stands out in the results from Zambia is that all dimensions are very weak, except for the communication dimension. This dimension is equal to the communication dimension from India.

The cosine similarity between India and China was 0,97. We stated, how higher the cosine similarity is, the more likely the country could be a successful outsourcing provider. In other words, the higher the cosine similarity, the more attractive this country is as outsourcing provider.

The similarity between the golden standard and the results from Zambia is calculated. In the table below all results are summarized.

Table 30: Measurements of India, China and Zambia.

	Knowledge	Culture	Communication	Infrastructure	Economy	Government
India	0,80	0,60	0,81	0,31	0,69	0,89
China	0,60	0,40	0,39	0,42	0,50	0,62
Zambia	0,31	0,45	0,81	0,11	0,38	0,49

$$India \cdot Zambia = 0{,}80 \times 0{,}31 + 0{,}60 \times 0{,}45 + 0{,}81 \times 0{,}81 + 0{,}31 \times 0{,}11 + 0{,}69 \times 0{,}38 + 0{,}88 \times 0{,}49 = 1{,}9016$$

$$\| India \| = \sqrt{0{,}80^2 + 0{,}60^2 + 0{,}81^2 + 0{,}31^2 + 0{,}69^2 + 0{,}89^2} = 1{,}7379298$$

$$\| Zambia \| = \sqrt{0{,}31^2 + 0{,}45^2 + 0{,}81^2 + 0{,}11^2 + 0{,}38^2 + 0{,}49^2} = 1{,}16794692$$

$$sim(India, Zambia) = \frac{1{,}9016}{1{,}7379298 \times 1{,}16794692} = \mathbf{0,94}$$

The result of this similarity is nothing like our expectations. The equations above show that the similarity between the vectors of India and Zambia are still quite similar. In figure 21, we see that Zambia is in clear need of improving their dimensions.

We have stated, the higher the similarity the more attractive an outsourcing provider will be. We know that Zambia has a similarity of 0,94 with the golden standard, but from my personal experience and literature we can conclude that Zambia is not ready for outsourcing.

From this information we can claim that the threshold of attractiveness lies above the 0,94, since Zambia is not ready for handling outsourcing. To give a more accurate estimation of this threshold, we need a lot more data and more countries should be measured.

It is unfortunate that the distance between attractive and unattractive is not greater. Now we can clearly see the impact of no weightings attached to the model. Because the similarity results, should give a broader range between attractive and unattractive outsourcing providers. In chapter 5.1 we created *hypothesis 5*, the similarity of Zambia with the golden standard strengthens our hypothesis.

The most important dimensions of Zambia are handled below:

Knowledge
The knowledge dimension of Zambia has a lean score of 0,33. This dimension desperately needs improvement because there is the need for skilled workforce. Zambia is currently undergoing big developments on educational levels. Universities are getting more applicants and more universities are being established.

As stated in chapter 2.2 companies are in search for access to skilled workforce and talents. When this important benefit is missing, outsourcing to that country is not a strategic move. Improving a dimension like knowledge takes a lot of time. It might take years before it shows a clear difference. Especially in a third world country like Zambia with a lot of poverty, achieving this is very difficult.

Culture
As previously stated, the culture dimension cannot change that easily. Zambia is a country with a lot of poverty and since a few years they have a steady economic growth. In the long run this will change things within the country and perhaps this will affect the long-term orientation dimension of the Hofstede model. But until then we have to work with the current culture figures.

Infrastructure
The infrastructure in Zambia is not as advanced as we are used to in the Netherlands. Zambia is currently investing in fiber network around the country; they have a huge disadvantage of not having any direct connection with the ocean. All lines need to be extended. The country has a few major cities; small villages inhabit the rest of the country with no electricity and water. This influences the infrastructure a lot.

Government
By improving the policies regarding foreign investments and starting with the use of software parks they are inviting companies to start their business in Zambia. Since the wages are attractive they should be able to attract people when their workforce is ready.

6.3.1. Recommendations

Based on all information, it is possible to give recommendations on how to improve the weakest dimensions. We can globalize these recommendations because there are two dimensions that play a huge role in these improving strategies. As described in chapter 5.2.1 there are two starting positions, either from the dimension government or the dimension knowledge.

In the case of Zambia, they should first improve their government dimension. It has been proven to be an ideal starting point for improving the rest of the dimensions. Secondly they should start improving the knowledge dimension. This dimension makes sure they have the knowledge and the experience that companies are looking for.

With all the information in this we can claim the following:

Claim 1:
Zambia is in need for improvements to be more attractive as an outsourcing provider.

Conclusion

This research started with the question:

To what extent is a country attractive for outsourcing ***1*** *and how can this be improved* ***2*** *?*

The research question exists of two parts and these are answered separately with the help of the sub-questions below:

- *What is the definition of outsourcing?*
  In short, you talk about outsourcing when two organizations have a contractual agreement, which involves an exchange of services and payments. Depending on the location of your outsourcing it has different names. Onshoring is done domestically, nearshoring is done within the same continent and offshoring is done internationally.

  There are three different types of outsourcing, for this research we focused information technology outsourcing (ITO).

- *What are the benefits and risks of outsourcing?*
  There are a lot of benefits and risks associated with outsourcing, whether this is done domestically or internationally. The most important benefits and risks are described in chapter 2.2 and 2.3. Concerning the benefits of outsourcing from the viewpoint of organizations, cost reduction and the search of a skilled and experienced workforce are the most critical.

  We don't have to choose the most important risk the chapter highlights that the most underestimated risk are the cultural differences. Many researches have been written about the dangers of the cultural aspect in outsourcing. This plays a gigantic role when creating the model.

- *What makes countries attractive as an outsourcing provider?*
  There are various decision models that help organizations to choose in- or offshoring and whether a country is attractive or not. Based on extensive literature reading, six dimensions have been created which all contribute to the attractiveness of a country. The following dimensions are the bases of a new measuring model:
    - Knowledge;
    - Culture;
    - Communication;
    - Infrastructure;
    - Economy;
    - Government.

With all the gathered information we know what makes a country attractive, but we still did not define 'attractiveness'. This led to a golden standard. Literature talks about the two most successful countries in the outsourcing business; namely India and China. India is the number one and therefore is an example for other countries.

- *What is the ideal situation for outsourcing providers?*

  To define this ideal situation, or as referred in this research by 'the golden standard', there was a need for a measuring model. A model has been created to measure the current state of a country. It exists of six dimensions (described above), each containing a set of measuring elements. These measuring elements are based on the risks, benefits, and literature about outsourcing. The outcome of the model is displayed in a radar chart to visualize their scoring on every dimension. The score for India is thus the ideal situation.

A country is attractive for outsourcing if it has a high similarity with the golden standard. The end goal is to have for each dimension the highest score possible. China has been used to validate the model, which resulted in a similarity of 0,97. This showed that the model is reliable because China is indeed an attractive outsourcing provider.

This answers the 1st part of the main research question; we are now able to tell to what extent a country is attractive for being the outsourcing provider. In the prediction-set we tested Zambia, this resulted in an attractiveness of 0,94 to the golden standard. The similarity is still rather high, which makes the 0,97 similarity of China and the golden standard less reliable. It is unfortunate that the cosine similarity does not offer a greater distance between the threshold of attractive and unattractive.

Based on personal experiences and literature we can say that Zambia is definitely not ready for being the outsourcing provider. It shows that the 0,94 is below the threshold of attractiveness. There is need for more measuring to define the exact threshold.

A.T. Kearney is a well-known and respected organization that publishes a new attractiveness-index once every few years. It appears that A.T. Kearney left out culture in their measurement schema (Figure 10). Our sub-question about the risks of outsourcing showed that the cultural differences certainly play a role in the attractiveness.

- *What policies can improve the attractiveness?*
  This sub-question is answered by causal relationships. In the model are six dimensions, which have interrelated causal relationships. By visualizing all dimensions and their measuring elements in system dynamic diagrams we found important causal relationships between these dimensions. These causalities show how dimensions positively or negatively influence other dimensions.

Throughout the thesis, four lemmas have been set up which build up to the final conclusion and answering the 2nd part of our main research question. There are ways to improve the attractiveness of a country. In the causal relationships between the dimensions, we found that there are reinforcement loops present.

We could draw the following conclusions from the causal relationships and reinforcement loops:
- Culture is critical for outsourcing because it cannot be influenced;
- Government is a dominant factor for improving the economy;
- Improving the knowledge and government dimension is a catalyst for the attractiveness;

By acknowledging the lemmas we can state that a country is attractive for outsourcing when it is similar to the golden standard. The most effective way to improve the attractiveness is by starting with the government dimension. This dimension has the most influence on other dimensions.

The attractiveness can be improved over time; the most important dimensions in outsourcing are government and knowledge because of the reinforcement loops. These dimensions are the catalysts for improving the attractiveness of an outsourcing provider.

7.1. Future works

In this thesis we propose a systematic approach to predict and improve the outsourcing providers attractiveness. This approach shows the importance of the culture dimension. Other decision models have not included this important dimension, although many literatures warn about the dangers of cultural differences.

The figures that we used in the thesis have been chosen in a very basic way. Future research may focus on improving these figures and add a weighting schema.

Basic measurement model
The measurement model is kept very basic as stated in chapter 3.2. These measurement tables for each dimension could be expanded with dozens more measuring elements and more accurate ranges. These ranges refer to the scoring table. This research shows the functionality of the model and how to interpret the outcome.

Weighting system
Aside from the basic implementation of this model, future research could be done to add a weighting system to the model. This is in line *hypothesis 5*. At first these weights were only needed for the dimensions itself, but later on it was clear that weights could also be added to the measuring elements.

Defining threshold
The similarity of Zambia with the golden standard is 0,94; this was not according to our expectations. We know from experience that this country is not ready for outsourcing. There has to be a threshold that defines when the similarity is attractive or not attractive. To achieve this, there is need for a lot more measuring and that could be done in future works.

Bibliography

Ukokobili, P. (2010, 7 15). *Nigeria: The Role of Outsourcing in an Emerging Economy*. Retrieved 12 26, 2011, from allAfrica.com: http://allafrica.com/stories/201007160395.html

UNICEF. (2012). *UNICEF - Zambia - Statistics*. Retrieved 6 10, 2012, from UNICEF: http://www.unicef.org/infobycountry/zambia_statistics.html

Winkler, J. K., Dibbern, J., & Heinzl, A. (2008). The Impact of Cultural Differences in Offshore Outsourcing — Case Study Results From German–Indian Application Development Projects. *Information Systems Frontiers , 10* (2), 243-258.

Wong, C. K. (2004, 7 20). Information Technology, Productivity and Economic Growth in China. Brisbane, Australia.

Xiao, L., Yu, V., & Gao, S. (2010, 01 27). *China Outsourcing Talent Forces - A Powerful Engine in the New Era of Globalization.* Retrieved 06 10, 2012, from ChinaSourcing: http://en.chinasourcing.org.cn/content2.jsp?id=3053

van der Linden, B., & Hengeveld, S. (2008). *Uganda IT-Outsourcing Project.*

A.T. Kearney. (2004). *AT Kearney's 2004 Offshore Location Attractiveness Index: Making Offshore Decisions.* Chicago: A.T. Kearney, Inc.

A.T. Kearney. (2010). *Building Flexibility into Software Licensing: Taking Advantage of New Options.* Chicago: A.T. Kearney.

A.T. Kearney. (2011). *Offshoring Opportunities amid Economic Turbulence: The AT Kearney Global Services Location Index.* Chicago: A.T. Kearney, Inc.

AfriConnect Zambia Limited. (2011). *Connectivity in Zambia*. Retrieved 12 27, 2011, from iConnect.zm: http://www.iconnect.zm/connectivity_in_zambia.php

Alon, I., Herbert, T. T., & Munoz, M. (2007). Outsourcing to China: Opportunities, Threats, and Strategic Fit. *Zagreb International Review of Economics & Business , 10* (1), 33-66.

BusinessWeek. (2011, 5 12). *China's Power Outages Come Early and Often*. Retrieved 4 23, 2012, from BusinessWeek: http://www.businessweek.com/magazine/content/11_21/b4229011807240.htm

Belcourt, M. (2006). Outsourcing - The Benefits and the Risks. *Human Resource Management Review , 16* (2), 269-279.

Cyranoski, D., Gilbert, N., Ledford, H., Nayar, A., & Yahia, M. (2011). Education: The PhD Factory. *Nature , 472*, 276-279.

Carmel, E. (2003). The New Software Exporting Nations: Success Factors. *The Electronic Journal of Information Systems in Developing Countries , 13* (4), 1-12.

Census of India. (2011). *Provisional Population Totals : India : Census 2011*. Retrieved 4 11, 2012, from Census of India: http://www.censusindia.gov.in/2011-prov-results/indiaatglance.html

CIA. (2011, 12 10). *Zambia*. Retrieved 1 3, 2012, from CIA - The World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/za.html

CIA. (2011, 12 20). *China*. Retrieved 1 3, 2012, from CIA - The World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/ch.html

CIA. (2011, 12 20). *India*. Retrieved 1 3, 2012, from CIA - The World Factbook: https://www.cia.gov/library/publications/the-world-factbook/geos/in.html

CheapTickets.nl. (2012, 5 30). *Goedkoopste Vliegtickets!* Retrieved 5 30, 2012, from CheapTickets.nl: http://www.cheaptickets.nl

China.com. (2012). *Leading Universities in China*. Retrieved 5 31, 2012, from China.com: http://www.china.org.cn/english/features/highschool/66744.htm

EuroITX. (n.d.). *Selecting outsourcing destination*. Retrieved 1 5, 2012, from EuroITX.com: http://www.euroitx.com/content/roadmap_country_selection_01.php

EXIN. (2012). *Computer Society of Zambia*. Retrieved 12 19, 2011, from Computer Society of Zambia: http://www.csz.org.zm/index.php

East West Connect. (2011, 8 15). *15 Years Chinese Internet Usage in 13 Pretty Graphs*. Retrieved 4 23, 2012, from East West Connect: http://www.east-west-connect.com/15-years-chinese-internet-usage-13-pretty-graphs

Earl, M. J. (1996). The Risks of IT Outsourcing. *Sloan Management Review/Spring* , 26-32.

Egger, H., & Falkinger, J. (2003, 6). The Role of Public Infrastructure for Firm Location and International Outsourcing. *CESIfo Working Paper No. 970* , 33.

Ellram, L., & Billingtone, C. (2001). Purchasing Leverage Considerations in the Outsourcing Decision. *European Journal of Purchasing & Supply Management , 7* (1), 15-27.

Encyclopedia of the Nations. (n.d.). *Zambia Working conditions, Information about Working conditions in Zambia*. Retrieved 6 12, 2012, from Encyclopedia of the Nations: http://www.nationsencyclopedia.com/economies/Africa/Zambia-WORKING-CONDITIONS.html

Erber, G., & Sayed-Ahmed, A. (2005). Offshore Outsourcing: A Global Shift in the Present IT Industry. *IT Industry, Intereconomics , 40* (2), 100-112.

Dutch Consulate General. (2011). *Outsourcing Comparison Study: South-East Asia.* Economic and Commercial. Guangzhou: MINBUZA.

Daily bloggr. (2010). *Countries with the Fastest & Slowest Internet Speeds in the World*. Retrieved 6 12, 2012, from Daily bloggr: http://www.dailybloggr.com/2010/05/countries-with-the-fastest-slowest-internet-speeds-in-the-world/

Djavanshir, R. G. (2005, 12). Surveying the Risks and Benefits of IT Outsourcing. *IT Pro* , 32-37.

Dollar, D., Hallward-Driemeier, M., & Mengistae, T. (2006). Investment Climate and International Integration. *World Development , 34* (9), 1498-1516.

Foster, V., & Dominguez, C. (2010). *Zambia's Infrastructure: A Continental Perspective.* Washington: The World Bank.

Frost, & Sullivan. (2005, 6 8). *IT Outsourcing: China versus India.* Retrieved 5 2, 2012, from Frost: http://www.frost.com/prod/servlet/cif-econ-insight.pag?docid=39745707

Gonzalez, R., Gasco, J., & Llopis, J. (2009). Information Systems Outsourcing Reasons and Risks: An Empirical Study. *International Journal of Social Sciences , 4* (3), 180-191.

Gonzalez, R., Gasco, J., & Llopis, J. (2006). Information Systems Offshore Outsourcing: A Descriptive Analysis. *Industrial Management & Data Systems , 106* (9), 1233-1248.

Gottschalk, P., & Solli-Sæther, H. (2005). Critical Success Factors from IT Outsourcing Theories: an Empirical Study. *Industrial Management & Data Systems , 105* (6), 685-702.

Indobase. (n.d.). *Government Policies - Favorable Govenrment Policies - Governemtn Policies and BPOs - India Outsourcing Advantage*. Retrieved 5 24, 2012, from Indobase.com: http://www.indobase.com/bpo/why-india/govt-policy.html

Hätönen, J., & Eriksson, T. (2009). 30+ Years of Research and Practice of Outsourcing - Exploring the Past and Anticipating the Future. *Journal of International Management , 15* (1), 15-27.

Hofstede, G. (2011). Retrieved 12 20, 2011, from Professor Emeritus - Geert Hofstede: http://www.geert-hofstede.com

Hofstede, G. H., Hofstede, G., & Minkov, M. (2010). *Cultures and Organizations - Software of the Mind* (3rd Revised Edition ed.). Europe: McGraw-Hill Education.

Julka, H., & Mishra, P. (2011, 4 7). *Only 25% IT graduates readily employable: Nasscom.* Retrieved 3 30, 2012, from Economic Times: http://articles.economictimes.indiatimes.com/2011-04-07/news/29392668_1_engineering-colleges-employability-study-nasscom

Jurison, J. (1995). The Role of Risk and Return in Information Technology Outsourcing Decisions. *Journal of Information Technology , 10*, 239-247.

Jameson, M. (2006). *Zambia Research and Education Networks (ZAMREN) Formation as an Emerging Academic Networking Strategy.* University of Zambia, School of Natural Science, Department of Computer Studies, Lusaka.

Kvedaraviciene, G., & Boguslauskas, V. (2010). Underestimated Importance of Cultural Differences in Outsourcing Arrangements. *Inzinerine Ekonomika - Engineering Economics , 21* (2), 187-196.

Kakabadse, A., & Kakabadse, N. (2002). Trends in Outsourcing: Contrasting USA and Europe. *European Management Journal , 20* (2), 189-198.

Khan, N., Currie, W., Weerakkody, V., & Desai, B. (2003). Evaluating Offshore IT Outsourcing in India: Supplier and Customer Scenarios. *Hawaii International Conference on System Sciences.* IEEE Computer Society.

Lee, M., & Aldred, S. (2012, 4 23). *China Internet Firms Face Venture Capital Funding Squeeze*. Retrieved 5 31, 2012, from Reuters: http://www.reuters.com/article/2012/04/23/net-us-dealtalk-china-internet-idUSBRE83M0AY20120423

Leiber, N. (2010, 9 23). *IAOP :: 'Rural Outsourcers' Vie for Offshoring Dollars*. Retrieved 12 26, 2011, from IAOP: http://www.iaop.org/Firmbuilder/Articles/19/205/3077/Default.aspx

NationMaster.com. (2005). *Price Basket for Internet US$ per Month Statistics*. Retrieved 5 31, 2012, from NationMaster: http://www.nationmaster.com/graph/int_pri_bas_for_int_us_per_mon-price-basket-us-per-month

Netherlands Embassy. (2012). *Trade and Investment in Zambia*. Retrieved 6 12, 2012, from Netherlands Embassy: http://www.netherlandsembassy.org.zm/en/trade.html

Mukherjee, N. (2009, 6 4). *Groping in the Dark*. Retrieved 5 30, 2012, from India Today: http://indiatoday.intoday.in/story/Groping+in+the+dark/1/45139.html

Mapsofindia.com. (2001). *Indian Languages Map*. Retrieved 12 27, 2011, from Mapsofindia.com: http://www.mapsofindia.com/culture/indian-languages.html

Masani, Z. (2008, 2 27). *India Still Asia's Reluctant Tiger*. Retrieved 12 26, 2011, from BBC: http://news.bbc.co.uk/2/hi/business/7267315.stm

Outsourcing Center. (2004, 8 1). *What Causes Outsourcing Failures?* Retrieved 12 25, 2011, from Outsourcing Center: http://www.outsourcing-center.com/2004-08-what-causes-outsourcing-failures-article-37826.html

Overby, S. (2003, 11 1). The Hidden Costs of Offshore Outsourcing. *CIO Magazine - Offshore Outsourcing* .

Qu, Z., & Brocklehurst, M. (2003). What Will It Take for China to Become a Competitive Force in Offshore Outsourcing? An Analysis of the Role of Transaction Costs in Supplier Selection. *Journal of Information Technology* (18), 53-67.

Sautedé, E. (2002). Telecoms in China: Towards a Post-WTO Shock Therapy? *China Perspectives , 41*, 33-46.

Sahota, D. (2010, 9 20). *IT Education in China is Eclipsing UK Efforts.* Retrieved 4 3, 2012, from Computing.co.uk: http://www.computing.co.uk/ctg/news/1817495/it-education-china-eclipsing-uk-efforts#ixzz1qy1dQp18

Sepehri, M., Baker, R., & Adams, M. (2009). The Information Technology Outsourcing Advantage: India vs. China. *Review of Business Information Systems , 13* (3), 1-10.

Software Engineering Institute. (2012). *Published Appraisal Results*. Retrieved 5 31, 2012, from Software Engineering Institute: https://sas.sei.cmu.edu/pars/pars.aspx

SoftKenya. (n.d.). *Information Communication Technology in Kenya*. Retrieved 1 5, 2012, from SoftKenya: http://softkenya.com/technology/business-process-outsourcing-bpo/

Steinbach, M., Karypis, G., & Kumar, V. (2000). A Comparison of Document Clustering Techniques. *KDD Workshop on Text Mining.*

Rao, M. T. (2004). Key Issues for Global IT Sourcing: Country and Individual Factors. *Information Systems Management , 21* (3), 16-21.

Rediff. (2009, 4 1). *India Ranks 115th in Internet Connection Speed.* Retrieved 3 26, 2012, from Rediff: http://www.rediff.com/money/2009/apr/01india-ranks-115th-in-net-connection-speed.htm

Roberts, C., & Wasti, S. (2002). Organizational Individualism and Collectivism: Theoretical Development and an Empirical Test of a Measure. *Journal of Management , 28* (4), 544-566.

Rose India. (n.d.). *Types of Outsourcing, Different Types of Outsourcing, Types of Outsourcing Services*. Retrieved 12 10, 2011, from Rose India: http://www.roseindia.net/services/outsourcing/different-types-of-outsourcing.shtml

Times Of India. (2010, 10 24). *Even a Sneeze Can Cause Power Outage in City*. Retrieved 4 23, 2012, from TImes Of India: http://articles.timesofindia.indiatimes.com/2010-10-24/hyderabad/28221439_1_power-cuts-areas-power-lines

The World Bank Group. *Zambia Country Brochure.*

The Outsourcing Institute. (n.d.). *Top Ten Outsourcing Survey*. Retrieved 12 25, 2011, from The Outsourcing Institute: http://www.outsourcing.com/content.asp?page=01b/articles/intelligence/oi_top_ten_survey.html

This is Total Essex. (2010, 8 19). *The Average Wage in Zambia is $289, and whoever earns this will also have a family to support*. Retrieved 6 12, 2012, from This is Total Essex: http://www.thisistotalessex.co.uk/FACT-FILE-Africa/story-12624543-detail/story.html