

## Exploration of cultural influences on Business and IT alignment

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### Abstract

*Aligning IT to business needs is still one of the most important concerns for senior management. The message of Business and IT Alignment (BIA) is logical and undisputed, but implementation is apparently difficult. As part of a research program on the differences between the theory and practice of BIA, this paper explores the impact of (national) cultures on the maturity of BIA.*

*The paper relies on Hofstede's framework of cultural dimensions [18] to understand the concept of culture. After a brief introduction on BIA we then analyze this influence by conceptually assessing the potential impact of Hofstede's cultural dimensions on the variables of BIA maturity. This conceptual exercise is then tested in a small-scale empirical exploration by comparing BIA maturity scores of Belgium and Dutch financial institutions.*

*The results support a potential effect of national cultures on BIA maturity, especially in "governance maturity" and "skills maturity", but not all expected results are confirmed.*

## 1. Introduction

Information technology (IT) is changing the way companies organize their business processes, communicate with their (potential) customers and deliver their services [1]. A key success factor for a successful company is an effective and efficient alignment of the way IT is supporting business strategies and processes. The necessity and desirability of aligning business needs and IT capabilities is examined in numerous articles [35, 36, 5, 27, 38] and its importance is well recognized [11]. The annual survey of top management concerns by the Society for Information Management ([www.simnet.org](http://www.simnet.org)) ranked 'IT and Business alignment' as the No. 1 concern for four years in a row [43]. In last year's survey, alignment lost its doubtful honor as the 'top concern' to drop to the second place on the list. The alignment between business needs and IT capabilities therefore still is a prominent area of concern.

After many years of research into business and IT alignment (BIA), Chan & Reich [7] list over 150 studies, the prominent position of BIA as one of the top concerns, should be surprising. Should it be concluded that academic research still cannot provide solutions for the issues business and IT executives face in practice? We believe this is at least partly true. Some questions that practitioners face are not addressed in academic literature [7]. Among these questions is the impact of culture on BIA. Several authors [54, 22] suggest a relationship between the effectiveness of BIA and the culture within an organization. Other authors show that national cultures affect the way IT is used or perceived [50, 25]. This paper aims to explore the way culture affects the maturity of BIA in organizations.

It is important to study the impact of culture on the alignment of business and IT because organizations are increasingly depending on IT for their communication and business processes. Information has become ubiquitous in many organizations and IT is therefore one of the most important resources of production and knowledge. However, embedding IT in organizations requires careful consideration of the organization's culture and the culture of its surrounding countries [37, 54].

The central question that this paper addresses is how national culture influences the alignment of business and IT in organizations. After a brief paragraph on the concepts of BIA, and a framework for studying national cultures, we explore the relationship between culture and BIA. The last part of the paper presents a small-scale empirical study to explore the expected influence from national culture on BIA maturity.

## 2. Business and IT Alignment

Despite of the apparent importance of aligning IT and business, the majority of publications are rather vague in terms of how to define or practice alignment [31]. Expressions used in this context are 'fit' [50], 'harmony' [26], 'integration' [55], 'linkage' [16], 'bridge' [9] or 'fusion' [41]. Chan [6] distinguishes two prevailing conceptualizations of the alignment problem. The first one focuses on planning and objectives integration and views alignment as the degree to which the business mission, objectives and plans are supported by the IT mission, objectives and plans. This view can be found in Reich and Benbasat [36], Kearns and Lederer [23] and Hirschheim and Sabherwal [17]. A more holistic conceptualization of BIA can be found in Henderson and Venkatraman [16]. Their widespread Strategic Alignment Model pictures BIA as a fit between functional domains, business and IT, on different levels. "Strategic", externally focused, directed towards the business environment, and "organizational", internally focused, directed towards administrative structures. Henderson and Venkatraman pay extensive attention to the different approaches of achieving this fit.

Based on the components of the strategic alignment model and his research on the enablers and inhibitors of BIA [27], Luftman developed a Business and IT Alignment Maturity model. In this model six criteria are used to determine the maturity of the alignment of IT and business [29]. These criteria are described in Table 1. In the concept of BIA maturity, the level of maturity indicates an organization's capability to align IT to business needs. As in many maturity models, Luftman's BIA maturity assessments involve five levels of maturity.

Since its publication, the application of Luftman's maturity model has been reported by several authors [13, 10, 40, 30, 12]. These studies analyze the results of the assessments by industry sector, by respondent and/or by organizational contingencies. The potential influence of national cultures on BIA maturity, however, is not analyzed in these reports. Given the influence of culture on the use and perception of IT, as was found in several studies (referenced in section 4), it seems likely that national culture may also have an influence on BIA maturity.

### 3. National culture

Hofstede [19] defines culture as “the collective programming of the mind, which characterizes the members of one organization from others.” By “collective programming” Hofstede refers to the symbols, heroes, rituals and values that collectively define a culture.

Cultures come in many different kinds or layers, such as national cultures, organizational cultures, organizational subcultures and occupational cultures [14, 19]. In this paper we explore the impact of national cultures on Business IT Alignment. We rely on Hofstede’s dimension framework to understand more about the concept of national cultures. This framework characterizes culture on four dimensions:

#### *PDI (Power Distance Index)*

The power distance index is an indication of the extent to which less powerful members of a society accept unequal distribution of power. It reveals dependence relationships in a country. A low PDI shows limited acceptance of power inequality and less dependence of subordinates on managers. It also shows a preference for consultation and cooperation.

#### *IDV (Individualism vs. collectivism)*

In cultures that are considered highly individualistic, individuals are loosely tied and are expected to look out for themselves and their family. In ‘collectivist’ cultures, people are integrated into strongly cohesive in-groups, and group loyalty lasts a lifetime. In individualistic cultures, time, punctuality and schedules are considered highly important, whereas in collectivistic cultures personal relationships and contacts prevail.

#### *MAS (Masculinity vs. femininity)*

In the dichotomy masculine versus feminine, a masculine culture values assertiveness, performance and material success. In a feminine society values like quality of life, tenderness and modesty prevail. In a feminine culture, individuals don’t like to stand out or be unique, whereas in a masculine society success and career are valued highly.

#### *UAI (Uncertainty Avoidance Index)*

The uncertainty avoidance index is defined as “the extent to which the members of a culture feel threatened by uncertain or unknown situations” [19]. Cultures with a high UAI have a large need for rules and regulations to guide tasks. Cultures with a low UAI are less rule-dependent and are more trusting [33].

Based on follow-up research among students in 23 countries around the world, and criticism that the model represented a very ‘western’ way of thinking, a fifth dimension was added [4].

#### *LTO (Long Term Orientation vs. Short Term Orientation)*

This dimension is an indication of the perception of time in a culture and is based on the heritage of Confucius, the most influential Chinese philosopher who lived around 500 B.C. Values associated with Long Term Orientation are thrift and perseverance; values associated with Short Term Orientation are respect for tradition, fulfilling social obligations, and protecting one’s ‘face’.

In his study, Hofstede measured the score of over 74 countries on these five dimensions.

Hofstede’s framework may not be perfect, e.g. the omission of former Eastern European countries in the study has been criticized [32], and some authors [32, 42] prefer alternative frameworks like Schwartz’s [39]. We, however, use Hofstede’s framework in this study because it is widely known and used among both academics and practitioners., and the positions of the respondents in our study, management level professionals within an IT context, closely resemble Hofstede’s respondents. In addition, alternative frameworks, like Schwartz’s, achieved a refinement of Hofstede’s work, rather than a contradiction [32].

**Table 1. BIA maturity variables.**

<i>BIA maturity variable</i>	<i>Description</i>
Communication	How well does the technical and business staff understand each other? Do they connect easily and frequently? Does the company communicate effectively with consultants, vendors and partners? Does it disseminate organizational learning internally?
Value measurement	How well does the company measure its own performance and the value of its projects? After projects are completed, do they evaluate what went right and what went wrong? Do they improve the internal processes so that the next project will be better?
Governance	Do the projects that are undertaken flow from an understanding of the business strategy? Do they support that strategy? Does the organization have transparency and accountability for outcomes of IT projects.

## 4. The impact of culture on Business and IT Alignment

(National) Culture influences the way IT is perceived or used. Several authors [46, 25, 24, 20, 34, 3, 44, 54, 32, 2] found proof of this in their studies. All of these studies show a certain impact of national cultures in the perception and use of IT. Given these findings it can be expected that culture also influences the alignment of IT and business. This influence, however, is not reflected in any studies on BIA so far.

In a reaction to his most recent report on the maturity of BIA in organizations [30], Luftman acknowledges the fact that international companies and international activities are included in the study. The potential influence of national cultures on BIA maturity is not analyzed. Given the impact of national cultures on the use and perception of IT found in earlier studies, it can be expected that cultures could also influence the perception of BIA maturity on the different variables of Luftman's assessment model. For example, an expected relationship can be that countries with a higher uncertainty avoidance score place more emphasis on governance of IT, resulting in a higher score on governance maturity and value transparency.

In order to specify these relationships, the next section explores how BIA maturity scores on each variable may be influenced by the culture dimensions. The influences that are expected are based on indications provided by literature. In section 5 of the paper the expected relationships between national culture and BIA maturity are further specified for the national cultures of the Netherlands and Belgium. These countries, although geographical neighbors, illustrate the differences between typical northern European and southern European cultures. The expected relationships were tested in the small-scale research project reported in section 6.

### 4.1 Power Distance Index

#### *PDI - Communications maturity*

Based on the findings of Sørnes et al. [44], it can be concluded that a low PDI score indicates close working relationships between hierarchical levels and assertive behavior by subordinates. This can be expected to result in a higher Communications maturity because of more intensive and less formalized communication.

#### *PDI - Value measurement maturity*

Following the motivation stated under 'Communications', a lower PDI score can be expected to result in less need for creating transparency, procedures and reports that enhance Value measurement, therefore resulting in a lower maturity on this factor.

#### *PDI - Governance maturity*

Again based on the findings of Sørnes et al. [44] that concluded that a low PDI score indicates close working relationships between hierarchical levels and assertive behavior by subordinates, it should be expected that in cultures with a low PDI have less need for formalized governance processes, resulting in a relatively lower Governance maturity.

#### *PDI - Partnership maturity*

Following the motivation given under 'Communications', a lower PDI score can be expected to result in a higher Partnership maturity because of more intensive, less formalized and richer communication.

#### *PDI - Scope & Architecture maturity*

Given the characteristics of this factor, no indication was found in the literature to indicate how the PDI relates to the Scope & Architecture maturity.

#### *PDI - Skills maturity*

The high level of assertiveness that is expected to result from a low PDI score is stimulating entrepreneurship and initiative in lower organizational levels and can therefore be expected to result in a high Skills maturity.

### 4.2 Individualism vs. Collectivism

#### *IND - Communications maturity*

In individualistic societies, the task will normally prevail over personal relationships [15, 52]. A high IND score could therefore indicate more task oriented communication that will result in a high maturity score, but lacks personal warmth that may be important in case of problems.

#### *IND - Value measurement maturity*

Individualistic cultures will normally show a high appreciation of value and performance. It should therefore be expected that these societies score relatively high on Value measurement maturity.

#### *IND - Governance maturity*

In Hofstede's study, the United States scores highest (most individualistic) of all nations on this dimension. The United States also developed strongly in governance as a reaction to fraudulent actions of individuals. It should therefore be expected that High IND cultures also score high on Governance maturity.

#### *IND - Partnership maturity*

In individualistic cultures personal task prevail collective tasks [49]. A high IND culture should therefore be expected to result in a lower Partnership maturity. On the other hand, Van Birgelen et al. [3] found that in an individualistic culture people seem to be more innovative and trusting in exchange relationships with external parties, which could be reflected in a higher Partnership maturity.

#### *IND - Scope & Architecture maturity*

Given the more collective nature of architecture it can be expected that a high IND culture should be reflected in a relatively low score on Architecture maturity. On the other hand, the findings of Van Birgelen et al. [3] provide indication that a more individualistic culture is reflected in a higher Architecture maturity because of its openness to exchange relationships with external parties.

#### *IND - Skills maturity*

A high IND culture can be expected to result in a high Skills maturity because of its appreciation of individual skill development.

### **4.3 Masculinity vs. Femininity**

#### *MAS - Communications maturity*

Hofstede's [20] findings support the claim that one-way communication will be more prominent in masculine countries, while two-way communication prevails in feminine countries. It should therefore be expected that a high MAS culture scores relatively lower on Communications maturity.

#### *MAS - Value measurement maturity*

A high "masculine" culture values assertiveness and focuses on material success, while "feminine" countries value modesty, tenderness, and quality of life [19]. A high MAS score can therefore be expected to score high on Value measurement maturity.

#### *MAS - Governance maturity*

Because of its orientation on material success, performance and measurement, a high MAS culture can be expected to score high on Governance maturity.

#### *MAS - Partnership maturity*

In more feminine cultures individuals don't like to stick out, be unique or conspicuous, unlike the more assertive and career-seeking individuals found in masculine cultures [44]. This 'live and let live' approach could enhance partnerships between individuals, departments or organizations. A less MAS culture should therefore be expected to result in a higher Partnership maturity.

#### *MAS - Scope & Architecture maturity*

Because of its tendency to appreciate individual performance and success, a more masculine culture should be expected to score lower in Scope & Architecture maturity, which has a non-individual character.

#### *MAS - Skills maturity*

Because of its orientation on work and material success [19], a high MAS culture should be expected to result in a higher Skills maturity. On the other hand, a more "feminine" culture can be expected to stimulate a more diverse skills development that in fact could also result in a higher Skills maturity score.

### **4.4 Uncertainty Avoidance Index**

#### *UAI - Communications maturity*

A high UAI culture can be expected to score relatively lower on Communications maturity because of its tendency towards certainty, which does not stimulate open and informal communication.

#### *UAI - Value measurement maturity*

Following the argumentation of Sørnes et al. [44], a high UAI culture can be expected to avoid uncertainty about value, resulting in a higher score on Value measurement maturity.

#### *UAI - Governance maturity*

Following the same argumentation [44], a high UAI culture can be expected to score high on Governance maturity because of its tendency to require certainty.

#### *UAI - Partnership maturity*

Given the fact that 'partnership' in general is based more on trust than on certainty, it should be expected that a high UAI culture scores relatively low on Partnership maturity.

#### *UAI - Scope & Architecture maturity*

A high UAI culture can be expected to score high on Architecture maturity because of its tendency to create certainty and security, and the slower rate of adoption of new technologies, as was found by Png et al. [34].

#### *UAI - Skills maturity*

Based on the findings of Livonen et al. [25], it can be expected that a high UAI decreases the pace of individual learning and will result in a lower Skills maturity.

## 5. Empirical exploration

As a first empirical exploration of the influence of national cultures on BIA, we compared the results of BIA maturity assessments in Belgium and the Netherlands. The selection of Belgium and the Netherlands was inspired by the substantial differences on three of the four Hofstede's culture variables by these neighboring countries. Belgium has a more southern European culture, quite close to the cultures of France and Italy, whereas the culture of Netherlands represents the northern European culture of countries like Norway, Sweden and Denmark. (As a comparison: The culture of the United States is close to the culture of the Netherlands on three dimensions (IND, PDI and UAI). On the fourth dimension (MAS), the United States score close to the Belgium culture.) Table 2 shows the culture dimensions of the Netherlands and Belgium [21].

**Table 2. Belgium and the Netherlands compared on Hofstede's variables.**

	PDI	IND	MAS	UAI
	Power Distance Index	Individualism vs. Collectivism	Masculinity vs. Femininity	Uncertainty Avoidance Index
Maximum score (all nations)	104	91	110	112
Minimum score (all nations)	11	6	5	8
Score for the Netherlands	38	80	14	53
Score for Belgium	65	75	54	94

Note: Because of the fact that Belgium does not have a score on Hofstede's long term orientation vs. short term orientation variable, this dimension is discarded in the rest of the paper.

Based on these scores, and the analysis in section 4 of this paper, the expected relationships between national culture and BIA maturity can now be further specified for the national cultures of the Netherlands and Belgium.

### 5.1 Power Distance Index

#### *PDI - Communications maturity*

The Belgium PDI is moderately high, whereas the PDI of the Netherlands can be classified as moderately low. Therefore it should be expected that the Netherlands scores higher in Communications maturity than Belgium.

Expectation: Comm M NL > Comm M BE

#### *PDI - Value measurement maturity*

The relatively low PDI score of the Netherlands should result in a lower Value measurement maturity, compared to Belgium.

Expectation: Value M NL < Value M BE

#### *PDI - Governance maturity*

Given the difference in PDI scores of Belgium and the Netherlands it should be expected that Belgium scores higher in Governance maturity than the Netherlands.

Expectation: Gov M NL < Gov M BE

#### *PDI - Partnership maturity*

Given the difference in PDI scores of Belgium and the Netherlands it should be expected that the Netherlands scores higher in Partnership maturity than Belgium.

Expectation: Par M NL > Par M BE

#### *PDI - Scope & Architecture maturity*

Given the lack of indications for this relationship it is unclear how the difference in PDI scores of Belgium and the Netherlands reflect in the Scope & Architecture maturity scores.

Expectation: Arch M NL ? Arch M BE

#### *PDI - Skills maturity*

Given the difference in PDI scores for Belgium and the Netherlands it should be expected that Dutch companies score higher on Skills maturity than Belgium companies.

Expectation: Sk M NL > Sk M BE

### 5.2 Individualism vs. Collectivism

Since Belgium and the Netherlands both score relatively high on the IDV factor, no specific difference in maturity score is expected on this variable.

Expectation: All variables NL  $\approx$  All variables BE

### 5.3 Masculinity vs. Femininity

#### *MAS - Communications maturity*

The Dutch culture can be classified as strong feminine, whereas Belgium takes on a middle position on this factor. This strengthens our earlier expectation that the Netherlands scores higher in Communications maturity than Belgium.

Expectation:  $\text{Comm M NL} > \text{Comm M BE}$

#### *MAS - Value measurement maturity*

The difference in MAS scores in Belgium and the Netherlands can be expected to result in a higher Value measurement maturity for Belgium companies, compared to Dutch companies.

Expectation:  $\text{Value M NL} < \text{Value M BE}$

#### *MAS - Governance maturity*

The difference in MAS scores in Belgium and the Netherlands strengthens the expectation that Belgium companies will show a higher Governance maturity score, compared to Dutch companies.

Expectation:  $\text{Gov M NL} < \text{Gov M BE}$

#### *MAS - Partnership maturity*

The high feminine score of the Netherlands provides indication that Dutch companies should be expected to show a higher Partnership maturity score than Belgium companies

Expectation:  $\text{Par M NL} > \text{Par M BE}$

#### *MAS - Scope & Architecture maturity*

The high feminine score of the Netherlands can be expected to reflect in a relatively high score on Scope & Architecture maturity, compared to Belgium.

Expectation:  $\text{Arch M NL} > \text{Arch M BE}$

#### *MAS - Skills maturity*

Given the different expected effects of masculinity/femininity on the Skills maturity score it is not possible to specify an expectation for the difference between Belgium and Dutch culture on this factor.

Expectation:  $\text{Sk M NL} ? \text{Sk M BE}$

### 5.4 Uncertainty Avoidance Index

#### *UAI - Communications maturity*

On UAI Belgium scores quite high and the Netherlands take a middle position. Again this indicates that the Netherlands is expected to score higher on Communications maturity than Belgium.

Expectation:  $\text{Comm M NL} > \text{Comm M BE}$

#### *UAI - Value measurement maturity*

The high UAI score of Belgium again this provides indication that Belgium companies should show a higher score on Value measurement maturity, compared to Dutch companies.

Expectation:  $\text{Value M NL} < \text{Value M BE}$

#### *UAI - Governance maturity*

Given the high UAI score of Belgium also this factor provides an indication that Belgium companies should be expected to show a higher Governance maturity score than Dutch companies.

Expectation:  $\text{Gov M NL} < \text{Gov M BE}$

#### *UAI - Partnership maturity*

This factor again provides indication that the Netherlands should be expected to score higher on Partnership maturity than Belgium.

Expectation:  $\text{Par M NL} > \text{Par M BE}$

#### *UAI - Scope & Architecture maturity*

Following Png's motivation [33], it should be expected that the high UAI score of Belgium is reflected in a high score on Architecture maturity.

Expectation:  $\text{Arch M NL} < \text{Arch M BE}$

#### *UAI - Skills maturity*

Given the high UAI score of Belgium, this provides support for the expectation that the Netherlands score higher on Skills maturity than Belgium companies.

Expectation:  $\text{Sk M NL} > \text{Sk M BE}$

### 5.5 Summary

Based upon this analysis, the expectations for the differences between Belgium and the Netherlands can be summarized as shown in Table 3.

## 6. The study

### 6.1 Participants

For this study, three Dutch companies and three Belgium companies in the financial services sector (banks, insurance companies, etc.) were selected. The choice for the financial services sector was made because, among different industries, financial services, together with manufacturing and retailing, is the first industry to use information technologies and as such is already more mature in these domains, making empirical research interesting [8]. To avoid bias by the overall BIA maturity, the participating companies were selected to have matching total maturity scores (deliberate sampling, [56]).

**Table 3. Summary of the expected differences between Belgium and the Netherlands.**

PDI	IND	MAS	UAI	Expectation
<b>Communications maturity</b>				<b>Communications maturity</b>
Comm M NL >	Comm M NL ?	Comm M NL >	Comm M NL >	NL >
Comm M BE	Comm M BE	Comm M BE	Comm M BE	B
<b>Value measurement maturity</b>				<b>Value measurement maturity</b>
Value M NL <	Value M NL ?	Value M NL <	Value M NL <	NL <
Value M BE	Value M BE	Value M BE	Value M BE	B
<b>Governance maturity</b>				<b>Governance maturity</b>
Gov M NL <	Gov M NL ?	Gov M NL <	Gov M NL <	NL <
Gov M BE	Gov M BE	Gov M BE	Gov M BE	B
<b>Partnership maturity</b>				<b>Partnership maturity</b>
Par M NL >	Par M NL ?	Par M NL >	Par M NL >	NL >
Par M BE	Par M BE	Par M BE	Par M BE	B
<b>Scope &amp; Architecture maturity</b>				<b>Scope &amp; Architecture maturity</b>
Arch M NL ?	Arch M NL ?	Arch M NL >	Arch M NL <	Undecided
Arch M BE	Arch M BE	Arch M BE	Arch M BE	
<b>Skills maturity</b>				<b>Skills maturity</b>
Sk M NL >	Sk M NL ?	Sk M NL ?	Sk M NL >	NL >
Sk M BE	Sk M BE	Sk M BE	Sk M BE	B

**Table 4. Participants in the study.**

Company	# Employees	# Respondents
<b>Dutch companies</b>		
1 Merchant Bank	500-1000	8
2 Investment Bank	250-500	9
3 Insurance company	>5000	6
<b>Belgium companies</b>		
1 Bank / Insurance	>5000	11
2 Bank	>5000	9
3 Insurance broker	500-1000	8

Table 4 shows the participants of the study. In each of the organizations, 6 to 11 business and IT managers completed the survey. Comparing the maturity scores assigned by business and IT per organization reveals that for most organizations the difference between the business and IT rating was not large. Trochim [47] refers to this as convergent validity, providing relative confidence into our measurement tool, as it shows that two totally independent groups (business and IT) within one single organization are coming up with very similar appreciations for the business/IT alignment maturity. This confidence in the measurement instrument is supported by work of Cumps et al. [10], who used a very similar measurement instrument based on the Luftman's [29] maturity model, and found that the alignment scoring was sufficiently robust for further analysis.

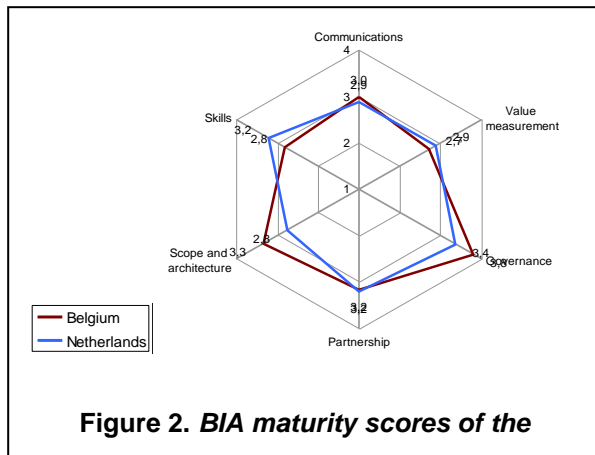


Figure 2. BIA maturity scores of the

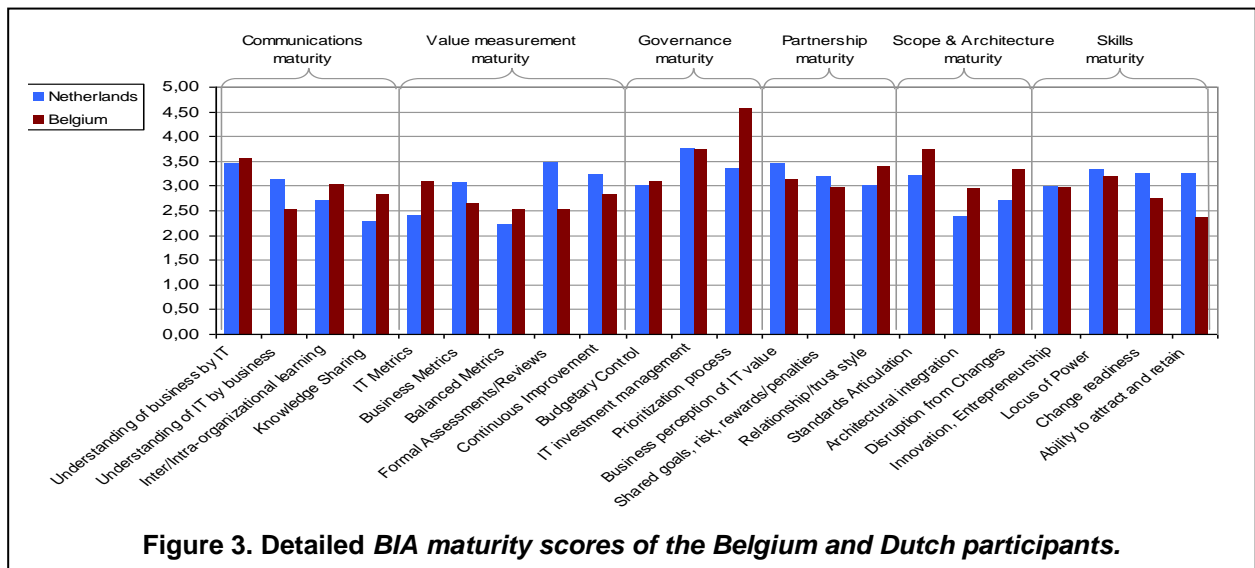


Figure 3. Detailed BIA maturity scores of the Belgium and Dutch participants.

## 6.2 Results

Figure 2 shows the overall average results of the BIA maturity assessments of the Belgium and Dutch participants. From this graph, some differences are immediately clear, specifically for “skills”, “governance” and “scope and architecture”. Figure 3 shows the results on a deeper level. Based upon these differences, the following analysis can be made.

### Communications maturity

Average maturity of Belgium participants: 3.0.

Average maturity of Dutch participants: 2.9.

The scores of the Belgium participants and of the Dutch participants do not show a lot of difference, also on the level of the individual assessment items shown in Figure 3. The expected difference is therefore not confirmed.

### Value measurement maturity

Average maturity of Belgium participants: 2.7.

Average maturity of Dutch participants: 2.9.

The scores of the Belgium participants and of the Dutch participants on this variable show some difference. On the more detailed level, a substantial difference is shown on the item ‘ Formal assessments / reviews’. The direction of the difference, however, is opposite to the expectation. The expected difference is therefore not confirmed.

### Governance maturity

Average maturity of Belgium participants: 3.8.

Average maturity of Dutch participants: 3.4.

On this variable of BIA maturity, the results show the expected difference that the Belgium participants score higher than the Dutch participants. On the more detailed level it becomes clear that especially the prioritization process is scored significantly different. The expected difference is therefore confirmed.

#### *Partnership maturity*

Average maturity of Belgium participants: 3.2.

Average maturity of Dutch participants: 3.2.

The scores of the Belgium participants and of the Dutch participants on this variable are equal. The expected difference is therefore not confirmed.

#### *Scope & Architecture maturity*

Average maturity of Belgium participants: 3.3.

Average maturity of Dutch participants: 2.8.

For this variable the expectation was undecided. The results show a remarkably higher score of the Belgium participants than of the Dutch participants. On the more detailed level this difference shows on all items.

#### *Skills maturity*

Average maturity of Belgium participants: 2.8.

Average maturity of Dutch participants: 3.2.

For this variable, the results show the expected difference that the Dutch participants score a higher maturity than the Belgium participants. On the more detailed level it becomes clear that this difference shows on all items, but most strongly on ‘Ability to attract and retain’ and ‘Change readiness’. The expected difference is confirmed.

Table 5 shows the summary of the results of this exploratory study.

**Table 5. Summary of expectations and results.**

Expectation	Result	
<b>Communications maturity</b>		<b>Not confirmed</b>
Comm M NL > Comm M BE	Comm M NL ≈ Comm M BE	
<b>Value measurement maturity</b>		<b>Not confirmed</b>
Value M NL < Value M BE	Value M NL ≈ Value M BE	
<b>Governance maturity</b>		<b>Confirmed</b>
Gov M NL < Gov M BE	Gov M NL < Gov M BE	
<b>Partnership maturity</b>		<b>Not confirmed</b>
Par M NL > Par M BE	Par M NL = Par M BE	
<b>Scope &amp; Architecture maturity</b>		Not applicable (no expectation)
Arch M NL ? Arch M BE	Arch M NL < Arch M BE	
<b>Skills maturity</b>		<b>Confirmed</b>
Sk M NL > Sk M BE	Sk M NL > Sk M BE	

## 7. Conclusions and limitations

The conceptual analysis of the potential influence of national cultures on BIA maturity provides indications that this influence is indeed more than likely and that its influence is consistent over the different dimensions of culture. Our first empirical exploration provided support for the existence of differences in BIA maturity between countries. More specifically, the differences in scores regarding the alignment domains “governance maturity” and “skills maturity” could be explained by Hofstede’s cultural differences studies, with governance maturity scoring higher in Belgium and skills maturity scoring better in the Netherlands. On a more detailed level, it was expected and confirmed that the ‘portfolio management process’ received better in Belgium and that ‘Ability to attract and retain’ and ‘Change readiness’ clearly received better scores in the Netherlands.

Our study did not, however, confirm all expected results. The domains “communications maturity”, “value measurement maturity” and “partnership maturity” did not show the difference in scores that were expected. In fact, the scores showed no clear substantial at all. A potential explanation for this result could be the small sample size. Therefore, further study should be made, based on larger samples, to further explore and study the impact of cultural differences on business and IT alignment scores. Such studies can expand the comparison between Belgian and Dutch results, but could also address cultural differences between other nations worldwide.

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**About ITAG**

The Information Technology Alignment and Governance (ITAG) Research Institute, was established in within UAMS to host applied research in the domains of IT Governance and business/IT alignment. The research centre is an initiative of Prof. dr. Wim Van Grembergen and dr. Steven De Haes. Both have research and practical experience in the IT Governance and Strategic Alignment domains. Recently, this team was reinforced by senior researcher Hilde Van Brempt.

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