EXPORT PROMOTION

A Decision Support Model Approach

Editors

**LUDO CUYVERS
WILMA VIVIERS**

Chapter 10

Adaptation and application of the DSM for services in South Africa

Sonja Grater & Wilma Viviers

10.1 Introduction

World trade in services has increased dramatically in recent years. The total exports of services globally constituted 22% of total world exports during 2009, with an average growth rate of 7.6% since 1980 (UNCTAD, 2010). The Uruguay Round of the General Agreement on Tariffs and Trade (GATT) in 1993 initiated the global drive to liberalise services trade through the establishment of the General Agreement on Trade in Services (GATS). The GATS negotiations have driven the global process of opening markets for services trade that were previously protected by domestic government policies and other barriers (WTO, 2005). Countries now face various challenges, such as introducing healthy competition to the local services sector, building sufficient regulatory institutions that support the local services sectors and establishing effective export promotion mechanisms (Mattoo & Stern, 2008).

The services sector in South Africa has played a more considerable role in the economy and is becoming one of South Africa's significant export sectors (Steuart & Cassim, 2005). In the period from 2005 to 2009 the services sector contributed on average 65% to the GDP of South Africa (SARB, 2010). In 2010 a total of 79% of the labour force in South Africa was employed in the services sector (STATSSA, 2010). However, the exports of services only contributed 19% to the total exports of South Africa from 2005 to 2009 (ITC, 2010a). The largest services export sectors for South Africa over the five-year period were travel (63%), transportation (11%), and other business services (9%). This indicates that South Africa's service exports are mostly concentrated in one sector, travel, which constitutes 63% of

services exports. Therefore, South Africa has potential to diversify service exports into other sectors. Hausmann and Klinger (2008) indicated South Africa needs a much faster growth rate in exports and this can be achieved by moving exports into more non-resource based exports that do not need expensive resource inputs. Services are one of these non-resource based sectors that could contribute to the potential growth.

In the South African Trade Policy and Strategy Framework (TPSF), the Department of Trade and Industry (DTI), expresses the need for well-considered research that identifies the related development and export potential of key service sectors. It is further stated that South Africa needs to use scientific research to identify the development and export potential of key services sectors (DTI, 2010b).

Cuyvers, De Pelsmacker, Rayp and Roozen (1995) indicated that export promotion instruments should be aimed at identifying potential export opportunities in order to allocate scarce resources in government to the active promotion of those sectors that hold the greatest potential. In their study a decision support model (DSM) was developed in order to determine potential export opportunities in a scientific manner. This model addresses the need of governments to use a scientific method to identify export potential (see Chapter 4 for more detail).

This DSM approach has been adopted for the South African products in 2007 (Viviers & Pearson, 2007) and again in 2009 and 2010 (Viviers, Rossouw & Steenkamp, 2009; Viviers, Steenkamp, Rossouw & Cuyvers, 2010) to cater for the needs of the South African government. However, this model was only applied to products and the model does not identify export opportunities for services. Therefore, this chapter is aimed at identifying a methodology to develop a decision support model (DSM) for services, based on the same principles as the DSM for products. No other models for services could be found in the literature that performs the same function.

The following section of the chapter aims to create an understanding of the services sector. This is followed by an outline of the methodology of the DSM for services and subsequently a discussion of the results of the model.

10.2 Understanding services and the GATS negotiations

Due to the nature of services it is not possible to state one definition that captures the essence of the services sector as a whole (Fieleke, 1995; McLachlan, Clark & Monday, 2002). Traditionally services were defined as the “residual” economic sector (ASR, 2007). This term describes services as all economic activities other than mining, manufacturing, agriculture, forestry and fishing, therefore, defining services by what they are not. Services were also

seen as “non-tradable” and that services could only be delivered as it is produced, such as a hairdresser that gives a customer a haircut (Francois, 1990; Grönroos, 1999, Oyewole, 2001). Therefore, policymakers did not view services, as an integral part of the economy and services was associated with the informal sector of the economy, consisting of part-time and low-skilled jobs.

The perception of services has changed dramatically as the policymakers have realised the role that services actually play in an economy. Services can act as a support industry to the manufacturing and other sectors and Warren and Findlay (1999) described services as an economic activity that adds value to another “economic unit” or product. For example, financial services and transportation services are crucial to the manufacturing process and also to the exports of products.

However, Howells (2000) found that services cannot only be regarded as a support industry, but should also be recognised as an industry on its own. For instance, the banking sector acts as a support service to many other industries, but the banking sector in itself is also a tradable service and produces a “product” of its own (Daniels, 2000). This is the reason why it is difficult to develop one definition to describe the nature of service delivery.

The concept of classifying services evolved in the 1980s and under GATS the most well-known classification system was developed (WTO, 1991). This classification system divides services into 12 main-sector classifications. Each classification entails a group of services that perform similar functions, such as business services, communication services, construction services or financial services. These main sectors are then further divided into 160 sub-sectors, for example business services are divided into professional services, computer-related services, research and development services, and some other sub-sectors (WTO, 1991).

The GATS agreement also established the modes of supply, which represents the different methods by which a services trade transaction can take place. The modes of supply are summarised in Table 10.1. The modes of supply show that a service can be delivered to its end-user within the exporters’ own market, within the importer’s market, or without any contact between either of the two parties. This depends on the specific transaction and means that each mode of supply has different criteria and different challenges.

As part of the GATS framework, WTO member countries negotiate with each other to open markets for certain services sectors and these negotiations are captured by each country in a set/schedule of commitments. The commitments are made on a sub-sector level for all four modes of supply and the commitments in essence show to what extent market access is given for a specific services sector, as well as any restrictions that governments may impose on the sector. For example, a country may only wish to issue a limited amount of licenses

for foreign banks in the financial sector and this is captured as a “commitment” that will apply to all WTO member countries. The country cannot decrease the amount of licenses issues without informing all WTO member countries and officially making changes to their schedules of commitments. These commitments are made available publically (WTO, 2009). An example of a set of commitments is shown in Table 10.2.

Table 10.1. GATS modes of supply.

Mode of supply	Supplier's presence	Criteria
Mode 1: Cross-border supply	Service supplier is not present within the import country.	The exporter of the service provides the service to the importer without leaving the exporting country.
Mode 2: Consumption abroad	Service supplier is not present within the import country.	The exporter of the service provides the service to the importer in the exporting country.
Mode 3: Commercial presence	Service supplier is present within the import country.	The exporter provides the service to the importer by creating a commercial presence in the importing country.
Mode 4: Presence of natural person	Service supplier is present within the import country.	The service is exported by a natural person that enters the importing country to deliver the service.

Source: Author's own interpretation of WTO (1991); Hoekman (1996)

In order to increase exports of services and diversify exports into different sectors, the South African government needs to be actively involved in the export promotion of services. One of these activities includes negotiating with different WTO member countries to lift some of the barriers that are in place in order to South African services firms to gain entrance into those markets. To negotiate for all 160 sub-sectors of services is a great task, and therefore, it is advisable to select specific markets and services sectors that hold the greatest export potential for South African services.

Export promotion of services can take on many forms. Some guidelines are discussed in the following section.

10.3 Export promotion of services in South Africa

Export promotion organisations (EPOs) aim to stimulate exports by a variety of export promotion instruments, such as trade fairs, training and financial assistance. These instruments assist firms to market their products more successfully in other countries (Gillespie & Riddle, 2004). If export promotion is successfully enforced it should ultimately lead to export market diversification and provide a more balanced export platform (Martincus & Carballo, 2008).

According to the ITC (2010b) the main challenge services firms face when exporting are to convince foreign buyers to use a service from a source they have never engaged before. Usually new services firms are only contracted if they were referred on the recommendation of other firms that used the same services, and services firms that do not have an established reputation are avoided. Therefore, EPOs need to play a role in establishing the credibility of local service firms in foreign markets. The ITC also suggests that a successful EPO should select priority services sectors in which the country may have a competitive edge, sufficient capacity in the sector to support increased exports and a sector where there may be potential for synergy among the services (ITC, 2010b). The support instruments for services should be grouped into four categories, namely market understanding by means of field based studies, organising trade missions in target countries, assisting with focussed marketing projects and providing quality assurance for services firms to enhance their reputation (CDC, 2006). These instruments should be directed at those specific services sectors that hold the greatest export opportunities for South Africa.

The export promotion activities for services in South Africa are limited to only a few industry associations and export councils that are focussed on sub-sectors of services. The DTI in South Africa is the government institution that is responsible for export promotion and within the DTI structure the ITED (International Trade and Economic Development) and TISA (Trade and Investment South Africa) divisions are both involved in the services sector (DTI, 2010a). ITED is involved in the trade negotiations processes in order to open markets and lower barriers for South Africa's services. TISA is the division that performs most of the export promotion activities.

TISA has been involved in the development of a strategy to prioritise specific markets for South African exports as part of the process to more effectively allocate their resources (DTI, 2006). The DTI has limited capacity and therefore a need exists to have a scientific selection

process by which realistic export opportunities could be identified for South Africa. A decision support model (DSM) is currently in use and identifies potential export opportunities for South African products by means of a scientific method (see section 1). This model was only applied to products and the aim of the following section is to develop a similar model that can be applied to the services sector in South Africa. The results of the new decision support model (DSM) for services can be used to formulate a more scientific-based approach to export promotion for services in South Africa, as well as provide guidelines to diversify exports of services. The DSM for services is explained in the following section.

10.4 The development of a decision support model (DSM) for services

The DSM for products was based on a four filter process by which all possible product-country combinations were analysed and the combinations that showed the least potential were eliminated in each filter (see Chapter 4, also Viviers *et al.*, 2010). The same principle could be applied to services; however, the methods behind some of the filters have to be adjusted to account for the nature of services as well as the limited data availability. The aim of this section is to explain the methodology that was developed for each filter of the decision support model (DSM) for services.

10.4.1 Decision support model for services: Filter 1

The first filter of the DSM for products evaluated macro-economic data for 240 countries. The first part of the filter, known as Filter 1.1, analyses the political and commercial risk that a South African exporter would face in a foreign country. The credit risk ratings from the Belgian public credit insurance agency (ONDD, 2009) were used to calculate a compound risk rating for each country. The scores were weighed equally for all 240 countries and a cut-off value was determined to eliminate those countries that had a risk score higher than the cut-off value. The less interesting markets within the group of 240 were eliminated if they exceeded the cut-off value for the risk ratings and a total of 209 countries' risk scores were below the cut-off value and could be considered for further analyses in Filter 1.2. Of the 209 countries only 196 could be used in the next stage of Filter 1 due to insufficient data (Steenkamp *et al.*, 2009; Viviers *et al.*, 2010).

Filter 1.2 used the 196 countries continuing from Filter 1.1 and evaluated macro-economic indicators to determine if these markets were sizable or have been growing sufficiently in the short and long term. As per Cuyvers *et al.* (1995) and Cuyvers (2004) the GDP and GDP per capita would indicate if the country's economy is too small or do not show enough potential for growth and would therefore not be deemed as viable markets to export to. The nominal GDP and GDP per capita as well as GDP and GDP per capita growth rates were

used. Again a cut-off value was determined and the markets with insufficient growth were eliminated. A total of 101 countries complied with the set conditions and continued to the second filter of the model (Steenkamp *et al.*, 2009; Viviers *et al.*, 2010).

The same methodology for Filter 1.1 and 1.2 was used for the DSM for services as this filter is applied to country-level data and no adjustments were necessary.

10.4.2 Decision support model for services: Filter 2

The aim of the second filter of the DSM for products was to determine possible export opportunities for South Africa based on import data that would indicate market potential. Therefore, the same principle could be applied to the data for services. This section explains how Filter 2 was applied for services.

Filter 2 assessed the services sector-level data for each country. Data was extracted from the ITC Trade Map database for the 101 countries for the 61 sub-sectors for the period 2003 to 2007 (ITC, 2010b). This period's data was used in order to have comparable results with the DSM for products. Two countries, Turkmenistan and Uzbekistan, had no services trade data available and were eliminated immediately. This filter used the services import data for 99 countries for each of the 61 services sectors as a proxy for market size. Therefore, a total of 6,039 services-country combinations entered into this filter.

Within this filter the revealed comparative advantage (RCA) for South Africa is used to determine a cut-off point for each services sector. The assumption is made that if South Africa is relatively specialised in a particular product, i.e. $RCA \geq 1$, then one can be less strict in the selection of interesting countries than if South Africa is not specialised in the service, i.e. $RCA < 1$ (see Steenkamp *et al.*, 2009; Viviers *et al.*, 2010).

The model then further considered the import data for each services sector in the 99 countries continuing from Filter 1. The second filter determines whether the 6,039 services-country combinations had sufficient short- and long-term growth or a sufficient import market size. Countries were then categorised according to their potential short-term growth, long term growth and market size (see Steenkamp *et al.*, 2009; Viviers *et al.*, 2010) and the services-country combinations that showed sufficient growth were selected to continue to the next filter.

After applying this process to the 6,039 service-country combinations that entered the filter, a total of three countries were eliminated completely showing no export potential based on import growth or size. These countries were Bahamas, Bhutan and Brunei. A total of 96 countries showed possible export potential in at least one service sector or more. A total of

1,843 service-country combinations from the original 6,039 combinations showed possible export potential and could continue to Filter 3.

10.4.3 Decision support model for services: Filter 3

The third filter of the DSM for products used specific calculations for market concentration in Filter 3.1 that could not be applied to the available data for services, due to the fact that bilateral trade data is not available for services. For market accessibility in Filter 3.2 the DSM for products uses various variables that are specific to product trade such as tariffs, shipping costs and other logistics issues related to products. These variables are not applicable to services as services trade occur much differently to products trade, and no tariffs can be raised on services. Therefore, this study developed a new methodology for the third filter for services, as will be explained in this section.

10.4.3.1 Filter 3.1 of the DSM for services

Filter 3.1 of the DSM for products is based on the assumption that if a market for a specific product is very concentrated, i.e. there are only one or two major exporters to that market, access for new exporters will be very difficult (see Chapter 4, also Cuyvers *et al.*, 1995; Steenkamp *et al.*, 2009; Viviers *et al.*, 2010). The same concept was applied to the DSM for services by creating a proxy for trade openness based on the level of imports of a specific services sector. For the purposes of the DSM for services, the term “openness for services imports” (OSI) was used to describe the level of access for the market based on the ratio of imported services to the total services used in the specific market on a sector level. This proxy should be a relative guideline to show whether a market is easy to access or not.

The assumption was that if a country has high imports of services in relation to the total use or demand of services in the market, then the market is relatively open and there is scope to export services to that market. However, if a country has low imports of services in relation to the total use or demand of services in the market, then it is assumed that the market produces many services locally and the market is not very open or easily accessible for trade. Therefore, it would be more difficult to enter the market with new service exports. The assumption has its limitations, as a high imports of services in a market could still mean that the services in that market are imported only from one or two large suppliers, which means the market is still very concentrated and difficult to access. However, due to the lack of bilateral data it is not possible to determine the amount of exporters that supply a specific market and the current available data cannot prove otherwise.

Firstly in order to determine the amount of services used or demanded in a market, the amount of services produced locally was calculated. This was done by using the GDP figures

for each country (UNCTAD, 2010). These figures are broken down into agriculture, industry and services (which is further divided into wholesale, retail trade, restaurants and hotels, transport, storage, communication and other service activities). Therefore, to determine the total amount of services locally produced or supplied within the market, the total amount reported for the services sector as part of GDP was used and will be further referred to as "Services Produced (SP)". To calculate the total services demanded (SD) within the market, the following calculation was made:

$$SD_j = SP_j + Z_j - X_j$$

where:

j = importing country/market

SD = services demanded within the importing country

SP = services produced within the importing country

Z = services imported

X = services exported

The results of this calculation were used in order to determine the ratio of imported services to the total services demanded, which would determine the openness of the specific service in that market. This calculation was made as follows:

$$OSI_j = \frac{Z}{SD_j}$$

where:

j = importing country/market

OSI = openness for services or demand for services in the importing country

Z = services imported

SD = services demanded in the importing country as calculated for SD_j above.

These calculations were made for all 61 sub-sectors of services and the results of OSI_j were percentages of market openness for services for each of the services-country combinations that continued from Filter 2. A cut-off value was determined in order to identify the services-country combinations that were sufficiently "open" to continue to the next filter. Filter 3.1 was, therefore, aimed at creating an index for market concentration or trade openness for the 1,843 service-country combinations continuing from Filter 2. After applying the

methodology of Filter 3.1 a total of 961 service-country combinations had an OSI percentage above the cut-off value¹ and were selected to continue to the final section of Filter 3.

10.4.3.2 Filter 3.2 of the DSM for services

Filter 3.2 of the DSM for products eliminated product-country combinations on the basis of market accessibility. This filter for the DSM for services was developed to perform the same function, given the available data on services barriers. This study considered the methodology behind various techniques used in the literature to measure market accessibility (MA) or market access barriers in services. The broad categories of methods can be grouped into frequency measurements, price-based measurements, quantity-based measurements, gravity-model estimates and financial-based measurements. After reviewing the various methods it was found that the first methodology known as frequency measurements is the most applicable to Filter 3.2 of the DSM for services.

Hoekman (1996) was one of the first researchers to develop a method to quantify the barriers to trade in services, which became known as frequency measures. As part of the GATS agreement, participating countries list their individual schedules for all sectors for which they are prepared to make commitments, and any barrier that they wish to still apply to a part thereof. An example of a set of GATS commitments are provided in Table 10.2.

-
- 1 The calculation of the cut-off values in the different filters was done in the same manner as in the original DSM models. For a detailed description on the formulas used to determine the cut-off values, see Chapter 4, also Cuyvers (1997, 2004).
 - 2 The limitations on market access are a set of restrictions that a government applies to national as well as foreign suppliers and relates to the specific operations of the services sector firms (WTO, 2006).
 - 3 The limitations on national treatment implies that a government will not treat foreign services suppliers differently to national suppliers and are granted equal opportunities to compete. Under the GATS commitments a country would, therefore, indicate whether foreign suppliers would be treated differently or not (WTO, 2006).

Table 10.2. Example of a schedule of GATS commitments.

Sector or sub-sector	Mode of supply	Limitations on market access ²	Limitations on national treatment ³
Horizontal commitments (across all sectors)	Cross-border supply (Mode 1)	None	None other than tax measures that result in differences in treatment with respect to R&D services.
	Consumption abroad (Mode 2)	None	Unbound for subsidies, tax incentives, and tax credits.
	Commercial presence (FDI – Mode 3)	Maximum foreign equity stake is 49%	Unbound for subsidies, under a specific law, approval is required for equity stakes over 25%; new investment that exceeds a specific amount.
	Temporary entry of natural persons (Mode 4)	Unbound except for the following: intra-corporate transferees of executives and senior managers; specialist personnel subject to economic-need test for stays longer than one year; service sellers (sales people) for up to three months.	Unbound except for categories of natural persons mentioned referred to in the market-access column.
Specific commitments (for specific sector e.g. legal)	Cross-border supply (Mode 1)	Commercial presence required	Unbound
	Consumption abroad (Mode 2)	None	None
	Commercial presence (FDI – Mode 3)	25% of senior management should be nationals	Unbound
	Temporary entry of natural persons (Mode 4)	Unbound, except as indicated in horizontal commitments.	Unbound, except as indicated in horizontal commitments.

(Source: Hoekman, 1996; WTO, 2009)

Similar commitments to the ones shown in the table above are made by the WTO member countries for those services sectors that they are willing to open their markets. Under each sector that a country commits to, they have to specify one of three entries, namely none, bound with restrictions or unbound (WTO, 2009). Hoekman (1996) used these entries in his frequency measurements to quantify barriers to access for services by applying a weighting method for each commitment in each country. This was done as follows:

- (i) **None:** this indicates that a country commits not to place any limitations on market access or national treatment for a specific sector/mode of supply combination. National treatment indicates that treatment of a foreign supplier is no less favourable than that

of domestic services and service providers. Therefore, a **value of 1** was allocated for each “none” commitment made.

- (ii) **Bound with restrictions:** this indicates that a country sets a specific restriction on that specific sector, and this restriction is listed in their schedules of commitment. **A value of 0.5** was allocated in this instance.
- (iii) **Unbound:** No commitment has been made for a particular sector/mode of supply combination. **A value of 0** was allocated for each sector where a country is not willing to commit, and therefore, Hoekman (1996) viewed these as a market that is completely blocked against trade in that sector.

These scale values were allocated so that all the commitments from each country could be added together in order to provide a total value in the form of an index. The assumption was that the higher the total value, the greater the extent of market accessibility for the sector in the specific country, i.e. the more liberal the country was towards services trade (Hoekman, 1996). It is important to note that this methodology provides an indication towards the relative degree of restriction, and should not to be taken literally as indicators of ad valorem tariff equivalents.

The same concept was applied to Filter 3.2 in the DSM for services. The scale values were calculated for all of the services-country combinations continuing from Filter 2. A calculation was made of the maximum amount of commitments a country can make under each sector, assuming that if a country made the maximum amount of commitments that the market for that specific service sector had no trade restrictions or was completely accessible. Therefore, for each of the countries continuing from Filter 2, the total amount of commitments could be evaluated for each sector and a scale value of 0, 0.5 or 1 be applied as per the methodology by Hoekman (1996). This was done for each country for commitments on market access as well as national treatment, for each of the four modes of supply. Therefore, for each sector one set of commitments had to be made, with a minimum of four commitments for market access and four commitments for national treatment (see Table 10.2).

For each country the total commitments for market access and national treatment respectively could receive scale values on a sector level and then be compared to the total or maximum amount of commitments that can be made under each sector. These two percentages then form the level of openness under each sector and the average of the two percentages were used to determine the total level of openness or market access. Therefore, the overall level of market access (MA) for each services-country combination was calculated as follows:

$$MA_j = \text{Average} \left(\frac{LMA_j}{LMA_t} + \frac{LNT_j}{LNT_t} \right)$$

where:

MA = Market Access

j = importing country

t = total/maximum amount of commitments that can be made for the sector

LMA = total score for Limitations on Market Access as per the country's GATS commitments

LNT = total score for Limitations on National Treatment as per the country's GATS commitments

For the set of results a cut-off value was determined in order to identify which services-country combinations are sufficiently accessible (with low barriers) to continue to the next filter. By applying this methodology to the 1,843 services-country combinations continuing from Filter 2, it was possible to eliminate the services-country combinations that had very low market accessibility. A total of 666 services-country combinations had a market access value above the cut-off value and was selected to continue to the final selection in Filter 3.

10.4.3.3 Final Filter 3 selection

From Filter 3.1 and 3.2 two sets of data were now available to analyse in further detail. As per the methodology used in the DSM for products in South Africa (Steenkamp *et al.*, 2009; Viviers *et al.*, 2010), a services-country combination had to comply with the cut-off values of both Filter 3.1 and Filter 3.2 in order to continue to Filter 4.

The same method was followed for the DSM for services. The 961 services-country combinations from Filter 3.1 and the 666 services-country combinations from Filter 3.2 were compared and if a services-country combination was selected in both filters it could continue to the next filter. Therefore, a total of 578 services-country combinations were selected to enter into Filter 4, which is discussed in the following section.

10.4.4 Decision support model for services: Filter 4

No further services-country combinations were eliminated in this filter. The 578 services-country combinations were grouped into cells that differentiate the opportunities according to market size and growth (Filter 2) as well as market access characteristics (Filter 3). The aim of the cell classification was to provide a method by which the results of the DSM for services could be interpreted in order to differentiate between the different export promotion strategies. A cell classification (see Table 10.3) was constructed by which the services-country combinations were grouped according to the size or growth in the market

(as per calculations from Filter 2) as well as the level of market openness for service imports (OSI) (as per Filter 3.1) and market accessibility (as per Filter 3.2).

The rows in the cell classification in Table 10.3 indicate the size of the import market as per the calculations from Filter 2. Therefore, it indicates whether the opportunity falls in a large services market, a market which is growing over the short term and long term, a market which is large in size and is growing over the short term, a large market that is growing over the long term or a large market that is growing in the short and long term. The last cell classification is the optimal opportunity for exports as there is growing opportunity within an already large market. The columns in the cell classification in Table 10.3 are divided according to the market accessibility that was calculated in Filter 3.1 and 3.2, with either low or high openness for services imports (as per Filter 3.1) and either low or high market accessibility (as per Filter 3.2).

Table 10.3. Cell classification for the DSM for services.

Market size	Low OSI & Low MA	Low OSI & High MA	High OSI & Low MA	High OSI & High MA
Large services market	Cell 1	Cell 6	Cell 11	Cell 16
Short-term and long-term growth	Cell 2	Cell 7	Cell 12	Cell 17
Large services market, short-term growth	Cell 3	Cell 8	Cell 13	Cell 18
Large services market, long-term growth	Cell 4	Cell 9	Cell 14	Cell 19
Large services market, short-term & long-term growth	Cell 5	Cell 10	Cell 15	Cell 20
Total				

The optimal combinations of export opportunities lie in the fourth column where the markets are open for services imports and easily accessible with low trade barriers. It is also important to note that columns 2 and 3 are interchangeable as both have one positive and one negative value incorporated. Allocating the results of the DSM for services according to these cells provides a method by which an export promotion strategy for services in South Africa can be formulated. The following section provides a summary of the filters and results of each filter of the DSM. This is followed by a discussion of the results of the model in more detail with some policy recommendations that were derived.

10.5 A summary of the DSM for services for South Africa

Figure 10.1 below shows a summary of the filters that was applied in the DSM for services. The figure also shows the results of applying each filtering process to the available services data.

Figure 10.1. A summary of the application of the DSM for services for South Africa.

10.6 An analysis of the results of the DSM for services

After applying the filtering process discussed in section 4, a total of 578 services-country combinations were identified that had realistic export opportunities (REOs) for South African services. The results are analysed in two sections, firstly the results according to the cell classification, and secondly the results according to sectors, countries and regions.

10.6.1 Results according to cell classifications

The 578 services-country combinations were firstly clustered according to the cells as explained in section 4.4. The total number of opportunities per service does not show the size of the market, which is important in determining whether the export opportunity is

viable or not. A market may show high numbers of realistic export opportunities for a service, but the value of the opportunities may be very small. Therefore, in order to create a proxy for the market size, the total import demand for each sector was used for 2007. For the EU countries the intra-EU service trade data was taken out of the total imports for each country as many of these countries might show high imports, but it is mostly from other EU countries. These markets are less inaccessible for South African exporters. Due to data limitations unfortunately South Africa's bilateral trade could not be incorporated into these figures. The results were classified into cells, as can be seen in Table 10.4 below.

Table 10.4. Cell classifications of REOs based on the total import demand for each export opportunity in USD.

Market size	Low OSI & Low MA	Low OSI & High MA	High OSI & Low MA	High OSI & High MA
Large services market	160,084,540	158,688,749	39,455,027	49,050,145
Short-term and long-term growth	13,655,732	37,829,747	11,167,786	4,422,767
Large services market, short-term growth	14,389,582	102,435,938	10,099,651	30,670,944
Large services market, long-term growth	12,288,370	28,136,120	8,746,579	1,622,176
Large services market, short-term & long-term growth	56,530,626	62,007,274	4,101,128	38,691,540
Total	256,948,851	389,948,827	73,470,171	124,457,572

According to Table 10.4 the cell with the largest value of potential exports is Cell 1 where the markets are large in size, but the market openness for services and market access is low in comparison to the average of all the services-country combinations. Thereafter, there are also a large value of potential export opportunities in Cells 6 and 8. Each cell classification could have a different interpretation when it comes to export promotion.

The rows of the cell structure show the size of the import markets, varying from large service markets to growing markets. The majority of the number of export opportunities was in Rows 1 and 2. The first row indicates that the potential markets are already large in size and show very little additional extension/growth. However, these markets are settled and the demand for the service is constant. The second row is markets that have been growing in the short term and long term. These are also very good markets to enter due to the growing demand for these services in these markets.

The columns in the cell classifications indicate how easy these large and growing markets are to enter. If the opportunities fall in the first column, then the markets have low market accessibility. These markets need intervention from the government to reduce barriers to entry. The export promotion organisations should be involved in these markets to negotiate easier access for South Africa's service firms.

The second column indicates export opportunities in markets that have low market openness for services as they import very little in comparison to domestic supply of the service. This is a great barrier for exporters as this indicates that the domestic firms in these markets are very competitive. Therefore, EPOs need to be involved in the South African firms to identify means of ensuring they are very competitive before entering these markets. The services provided by the South African firms have to be on the same competitive level as the domestic and international firms in that market, with similar price ranges and providing the same quality service, if not better.

The third column shows export opportunities that have high market openness for services in terms of exports but are difficult to access due to stringent policies. Here the EPOs need to ensure they are involved in the negotiation processes to lower these barriers and ease access into these markets.

The fourth column indicates export opportunities that need very little export promotion intervention. These are opportunities with high openness for services as well as high market access. The exporters should have no trouble entering these markets themselves and may only need some supportive assistance if they are new exporters and have little export experience. The following section discusses the regional and sector results of the model for services.

10.6.2 Results according to region, country and sector

The following table shows the results of the DSM for services as allocated geographically in each region. The United Nations world regions were used to allocate the results regionally (UN, 2002). According to the number of opportunities identified in the model, the majority lies in Western Europe, Northern Europe and Eastern Europe. However, when analysing the total import demand for the identified export opportunities in each region, Eastern Asia shows the highest potential value for exports of services from South Africa.

Table 10.5. Geographical distribution of export opportunities.

Region	Sub-region	Number of opportunities	Total import demand 2007 in USD
Caribbean	Latin America	7	56,309
Central America	Latin America	2	758,090
Eastern Africa	Africa	1	282,400
Eastern Asia	Asia	41	214,505,347
Eastern Europe	Europe	63	72,399,922
Middle Africa	Africa	2	261,550
Northern Africa	Africa	2	391,823
Northern America	Northern America	21	59,270,475

Region	Sub-region	Number of opportunities	Total import demand 2007 in USD
Northern Europe	Europe	97	112,780,181
Oceania	Oceania	13	24,229,920
South America	Latin America	10	6,612,300
South-Central Asia	Asia	19	12,413,208
South-Eastern Asia	Asia	48	68,455,352
Southern Europe	Europe	93	62,257,510
Western Africa	Africa	10	600,157
Western Asia	Asia	45	59,960,357
Western Europe	Europe	104	148,739,521

For the purposes of diversifying South Africa's exports away from the travel sector (see section 10.1), it is necessary to show the results of the DSM per sector, based on the number of opportunities identified for each sector. Table 10.6 below indicates various sectors that hold potential for South Africa to diversify exports of services.

Table 10.6. Top 20 services sectors according to the number of export opportunities.

Services sector	EBOPS code	Number of opportunities	Total import demand 2007 in USD
Travel Personal – Health-related	241	39	2,962,487
Travel Personal – Other	243	38	250,780,485
Travel Business – Expenditure by seasonal & border workers	238	29	4,305,250
Travel Personal – Education-related	242	29	17,715,945
Travel Business – Other	239	27	59,934,743
Communications Services – Telecommunication services	247	19	18,099,223
Air Transport – Other	213	16	20,633,456
Air Transport – Passenger	211	15	34,497,114
Construction Services – Construction in the compiling economy	251	15	22,735,754
Advertising, market research, and public opinion polling	278	15	18,499,281
Road Transport – Freight	225	14	15,348,593
Franchises and similar rights	891	14	18,354,752
Sea Transport – Other	209	13	30,418,609
Services between affiliated enterprises, n.i.e.	285	13	24,466,759
Other personal, cultural and recreational services	897	13	3,168,628
Air Transport – Freight	212	12	12,671,646

Services sector	EBOPS code	Number of opportunities	Total import demand 2007 in USD
Rail Transport – Other	222	12	374,466
Computer services	263	12	14,560,542
Legal services	275	12	3,130,370
Architectural, engineering and other technical services	280	12	16,234,796

In Table 10.6 many travel and transport sectors are indicated, together with various other sectors, namely telecommunication services, construction services, advertising and market research, franchising, personal, cultural and recreational services, computer services, legal services as well as architectural and engineering services.

The following table provides the top 20 country-services combinations that were identified by the DSM for services, according to total import demand figures for each export opportunity.

Table 10.7. Top 20 country-services combinations according to the total import demand.

Country	EBOPS code ⁴	Services sector	Total import demand 2007 in USD
China	208	Sea Transport – Freight	35,132,100
United Kingdom	243	Travel Personal – Other	26,068,016
Japan	208	Sea Transport – Freight	25,313,076
China	243	Travel Personal – Other	23,299,199
Canada	243	Travel Personal – Other	19,242,650
Russia	243	Travel Personal – Other	18,488,611
Saudi Arabia	243	Travel Personal – Other	15,972,559
Germany	243	Travel Personal – Other	15,092,160
Romania	243	Travel Personal – Other	14,790,889
France	243	Travel Personal – Other	12,857,572
South Korea	208	Sea Transport – Freight	12,828,300
South Korea	243	Travel Personal – Other	12,337,900
Hong Kong	243	Travel Personal – Other	11,766,150
Australia	243	Travel Personal – Other	11,267,072
Norway	243	Travel Personal – Other	11,163,100
China	277	Business and management consultancy and public relations services	10,856,400

4 The ITC (2010b) reports trade data for services according to the Extended Balance of Payments for Services (EBOPS) classification developed by the United Nations (UN, 2002).

Country	EBOPS code	Services sector	Total import demand 2007 in USD
South Korea	209	Sea Transport – Other	10,765,900
Japan	211	Air Transport – Passenger	10,703,481
Singapore	243	Travel Personal – Other	9,755,525
Japan	209	Sea Transport – Other	9,332,815

This table indicates mostly European and Asian countries and the services sectors are mostly transportation-related and travel (tourism)-related. These sectors usually entail transactions of high value, which would motivate the reason why these sectors are in the list of top combinations.

These countries and services sectors can be used as key strategic sectors by the DTI in South Africa for the purposes of increasing and diversifying exports of services.

10.7 Conclusion

The aim of this chapter was to identify a methodology for a decision support model (DSM) for services, based on the same principle as the DSM for products. The chapter firstly described what is meant by the services sector in section 2 with a brief discussion on the GATS classification system and modes of transport. This was followed by a brief explanation of the export promotion of services in South Africa.

The fourth section discussed the methodology of the four filters of the DSM for services and a new methodology was developed for Filters 3.1, 3.2 and the cell structure in Filter 4. The result of the model was a list of the most realistic export opportunities for South African services that could be used by the DTI to make informed decisions and have a scientific base for strategic policy making. No other model for services could be found in the literature that performs the same function.

The results of the model indicated that the highest values of export opportunities for services are allocated in the European and Eastern Asian regions. Various sectors hold potential for South Africa to diversify exports of services. Many travel and transport sectors are indicated as those sectors with the highest potential export value based on import demand. Other services sectors also show high export potential for South African services, namely telecommunication services, construction services, advertising and market research, franchising, personal, cultural and recreational services, computer services, legal services as well as architectural and engineering services. These sectors can be used as key strategic sectors by the DTI in South Africa for the purposes of increasing and diversifying exports of services.

Further research on this model for services is necessary. It should be possible to link the results of the DSM for services with the DSM for products in order to identify synergetic export promotion opportunities for South Africa. Further research could also look at alternatives to refine the third filter that identifies export opportunities for services based on market accessibility as the GATS negotiations are expanded in the coming years. Currently the biggest problem is data availability for services trade. As the data for services become more readily available in the future, the DSM for services could be adapted accordingly. The results of the model could also be used in further research that is sector-specific and country specific to evaluate the selected export opportunities from Filter 4 in more detail.

References

- ASR. see Australian Services Roundtable.
- Australian Services Roundtable. 2011. Events. [Online.] Available from: <http://servicesaustralia.co/events/>. Accessed 13 April 2011.
- CDC. see Consultancy Development Centre.
- Consultancy Development Centre. 2006. *Export promotion of consultancy and management services from India*. Report prepared for Ministry of Commerce and Industry, March 2006.
- Cuyvers, L. 1997. Export opportunities of Thailand: a decision support model approach. Centre for Asean Studies (CAS), *Discussion Paper no. 9*, January.
- Cuyvers, L. 2004. Identifying export opportunities: the case of Thailand. *International Marketing Review*, 21(3): 255-278.
- Cuyvers, L., De Pelsmacker, P., Rayp, G. & Roozen, I.T.M. 1995. A decision support model for the planning and assessment of export promotion activities by government export promotion institutions: the Belgian case. *International Journal of Research in Marketing*, 12: 173-186.
- Daniels, P.W. 2000. Exports of services or servicing exports? *Human Geography*, 82(1): 1-15.
- Department of Trade and Industry. 2006. *National Export Strategy 2006-2009*. Division: Trade and Investment South Africa (TISA). Chief Directorate: Export Development and promotion. Pretoria, March 2006.
- Department of Trade and Industry. 2010a. *Export promotion directorate*. [Online.] Available from: <http://www.dti.gov.za/exporting/resourcebasedindustries.htm>. Accessed 23 February 2011.
- Department of Trade and Industry. 2010b. *A South African Trade Policy and Strategy Framework*. The DTI Campus, Pretoria. 64 p.
- DTI. see Department of Trade and Industry.
- Fieleke, N. 1995. The soaring trade in "non-tradeables". *New England Economic Review*, Nov/Dec: 25-36.
- Francois, J. 1990. Trade in producer services and returns due to specialization under monopolistic competition. *The Canadian Journal of Economics*, 23(1): 109-124.
- Gillespie, K. & Riddle, L. 2004. Export promotion organisation emergence and development: a call to research. *International Marketing Review*, 21(4/5): 462-473.
- Grönroos, C. 1999. Internationalization strategies for services. *Journal of Services Marketing*, 13(4/5): 290-297.
- Hausmann, R. & Klinger, B. 2008. South Africa's export predicament. *Economics of Transition*, 16(4): 609-637.
- Hoekman, B. 1996. Assessing the general agreement on trade in services. In: W. Martin and L.A. Winters. *The Uruguay Round and the developing countries*. Cambridge: University Press.
- Howells, J. 2000. Innovation and Services: New conceptual framework. *CRIC Discussion Paper*, 38, August.
- International Trade Centre. 2010a. *Trade Map: existing and potential trade*. [Online.] Available from: <http://www.trademap.org/>. Accessed 6 April 2010.

- International Trade Centre. 2010b. *Trade promotion approaches for services exports*. [Online.] Available from: <http://www.intracen.org/serviceexport/>. Accessed: 5 February 2010.
- ITC. see International Trade Centre.
- Martincus, C.V. & Carballo, J. 2008. Is export promotion effective in developing countries? Firm-level evidence on the intensive and the extensive margins of exports. *Journal of International Economics*, 76: 89-106.
- Mattoo, A. & Stern, R.M. 2008. Overview. In: A. Mattoo, R.M. Stern and G.A. Zanini. *A handbook of international trade in services*. New York: Oxford University Press.
- Office National du Dueroire. 2009. *Country risk ratings*. [Online.] Available from: <http://www.ondd.be/WebONDD>. Accessed 27 October 2009.
- ONDD. see Office National du Dueroire.
- Oyewole, P. 2001. Prospects for developing country exports of services to the year 2010: Projections and public policy implications. *Journal of Macromarketing*, 21(1): 32-46.
- SARB. see South African Reserve Bank.
- South African Reserve Bank. 2010. National accounts. *Quarterly bulletin*, 257, Sept. [Online.] Available from: <http://www.resbank.co.za/Publications/QuarterlyBulletins>. Accessed 11 April 2011.
- Statistics South Africa. 2010. *Quarterly labour force survey, quarter 3*. [Online.] Available from: <http://statssa.gov.za>. Accessed 6 December 2010.
- STATSSA. see Statistics South Africa.
- Steenkamp, E., Rossouw, R., Viviers, W. & Cuyvers, L. 2009. Export market selection methods and the identification of realistic export opportunities for South Africa using a decision support model. [Online.] Available from: <http://www.sadctrade.org/node/281>. Accessed 17 December 2009.
- Steuart, I. & Cassim, R. 2005. *Opportunities and risks in liberalising trade in services: country study of South Africa*. International Centre for Trade and Sustainable Development (ICTSD), Feb 2005.
- UN. see United Nations.
- UNCTAD. see United Nations on Trade and Development.
- United Nations. 2002. *Manual on statistics of international trade of services*. New York: United Nations Publications.
- United Nations Commission on Trade and Development. 2010. *Handbook of Statistics*. [Online.] Available from: <http://unctadstat.unctad.org/>. Accessed 16 February 2011.
- Viviers, W. & Pearson, J.J.A.P. 2007. *The construction of a decision support model for evaluating and identifying realistic export opportunities in South Africa*. Report prepared for the Department Trade and Industry, South Africa, May, 92 p.
- Viviers, W., Rossouw, R. & Steenkamp, E.A. 2009. *The sustainability of the DSM for identifying realistic export opportunities for South Africa: 2007-2008*. Report prepared for the Department Trade and Industry, South Africa, February, 105 p.

- Viviers, W., Steenkamp, E.A., Rossouw, R. & Cuyvers, I. 2010. *Identification realistic export opportunities for South Africa: application of a decision support model (DSM) using HS 6-digit level product data*. Report prepared for the Department of Trade and Industry, South Africa, September. 57 p.
- Warren, T. & Findlay, C. 1999. Measuring impediments to trade in services. *CIES Discussion Paper*, 99(19): 1-25.
- World Trade Organisation. 1991. *Services sectoral classification list*. [Online.] Available from: http://www.wto.org/english/tratop_e/serv_e/mtn_gns_w_120_e.doc. Accessed 27 May 2008.
- World Trade Organisation. 2005. *A handbook on the GATS agreement: prepared by the WTO Trade in Services Division*. Cambridge, UK: Cambridge University Press.
- World Trade Organisation. 2006. *Introduction to GATS*. [Online.] Available from: http://www.wto.org/english/tratop_e/serv_e/serv_e.htm. Accessed 15 November 2009.
- World Trade Organisation. 2009. *Services database: schedules of commitments*. [Online.] Available from: <http://tsdb.wto.org/default.aspx>. Accessed 15 November 2009.
- WTO. see World Trade Organisation.