

Report on the development of the BRIGAIID Market Analysis Framework (MAF+)

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Background

Europe is challenged by more severe droughts, floods and extreme weather events. Governments, investors and city planners are looking for new solutions to these new challenges. Meanwhile, researchers and developers are working on innovations to reduce the impact of climate change. However, many promising innovations never reach the market often due to a general lack of knowledge and consequent addressing of the requirements and constraints of end-users. BRIGAIID aims to bridge this gap by providing tools to support innovators in increasing the technical, social, and market readiness of their innovations and by setting up living-labs where innovators and end-users can come together.

The MAF+ is one of the innovation support tools provided by BRIGAIID. It is a web-based toolbox that has been prepared to assess the market potential of BRIGAIID innovations and serve as a guideline with accompanying resources to assist product developers in identifying and exploiting business opportunities. This framework is based on the Market Analysis Framework created within the SWITCH-ON FP7 project (<http://water-switch-on.eu/>), which was specifically intended to analyse the market for water information products and services. In BRIGAIID, the exercises in the framework have been adapted to explore the market for climate adaptation innovations and migrated from Excel-based worksheets to an online portal that facilitates collaborative assessments. Moreover, the framework has been streamlined and improved during the first year of BRIGAIID based on direct feedback from previous users and experts external to the project (e.g., SWITCH-ON product developers and experts in the field of innovation and capacity building) as well as from the own consortium members.

The newly updated framework exercises have been applied to study the cases of the BRIGAIID frontrunner innovations as a means of initial testing and gap identification. This first round of applications was conducted using the templates compiled in the annex to this report. The feedback received from the frontrunner innovators focused mainly on the need for punctual and concise support that provided quick and practical results. For them, it was important that the exercises were presented in a practical manner and that the new concepts were explained thoroughly but succinctly. These inputs were taken into consideration during the preparation of the templates compiled in the annex of this document as well as in the development of the online platform discussed here. This resulted in leaner introductory texts for the individual exercises (following always the structure: overview, objective, and instructions) and a reduction in the number of exercises (four of the exercises originally included in the SWITCH-ON MAF were discarded and one was replaced).

1. Introduction

Successful innovations require more than a great idea and technical expertise – they need a market. The BRIGAD Market Analysis Framework (MAF+) aims to support innovators to identify market opportunities, tune their innovations to meet actual market needs, and develop their business strategy.

The MAF+ is an online collaboration facility that compiles 12 market analysis and business development exercises designed to be completed by non-specialists in these topics with guidance from the BRIGAD WP6 partners. Each exercise supports innovators in the path towards evolving their climate adaptation innovation into a business. Succinct text explains each exercise's purpose, provides step-by-step instructions, and features relevant examples.

The MAF+ first guides the innovators and their team through the process of understanding the world around their innovation. It then helps define and prioritise market segments, and assists in estimating their size now and in the future. After assisting to gather and organize basic financial information to calculate a price and a break-even point, the MAF+ shifts to strategy, positioning the innovation relative to its competitors and identifying relative strengths and weaknesses. All of these steps are consolidated in the final exercise, which summarises the output in a business model canvas (Osterwalder & Pigneur, 2010).

Along the way, the MAF+ exercises help the innovators produce practical outputs that can feed straight into a business plan, marketing, and strategic planning documents. At the same time, the MAF+ aims to build the innovators' capacity and competitiveness by getting them acquainted with marketing and business concepts through practice.

While the MAF+ has been designed to be useful as a free stand-alone resource available to all, innovators who are part of the BRIGAD project additionally receive personalised guidance and support in completing the exercises. Through the MAF+ portal and other BRIGAD outlets, climate innovators interested in joining BRIGAD are invited to join as well and run an assessment using the MAF+.

A note of caution: innovators should keep in mind that the MAF+ is meant to support and guide the identification of business opportunities and lay the groundwork for market entry. It cannot, however, guarantee success—there is not one “golden formula” for this as there are many internal and external factors at play. Also, the usefulness of the MAF+ ultimately depends to a great extent on the level of commitment and effort the innovators put into it as well as on their enthusiasm for developing their business.

This document proposes how an innovator, a supporting partner, and an observer (i.e. the intended users of the MAF+) will interact with the online portal. The aim is to clearly lay out the path these users will follow and define the required software functionality at each step of the assessment. The document served as a blueprint to guide the web development of the MAF+ online portal. Detailed explanations of the 12 exercises are included in the annex, which compiles the draft templates used to inform the development of the portal.

2. MAF+ user types

The MAF+ is intended to have three user types: the innovator, the supporting partner from BRIGAIID Work Package 6 (WP6) and the observer of the process. These user types were defined on the basis of the necessary roles and responsibilities in an assessment (see Table 1).

Table 1. Roles and responsibilities in a MAF+ assessment.

Partner	Responsibility				
	Main responsibility in the application (i.e. use) of the MAF+	Providing support and guidance in the application of the MAF+	Conducting additional desk research	Elaborating a brief synthesis of the results	Following the process and providing external feedback
Innovator	✓		✓		
Supporting Partner (WP6)		✓	✓	✓	
Observer					✓

In an application of the MAF+, the innovator holds the main responsibility for running the assessment exercises. The innovator is given this central role for two main reasons. First, as the owner of the product idea and key member of her organisation, the innovator possesses in-depth knowledge on the features and specifications of the innovation as well as the assets, competences and goals of the firm. This insight is key to run the exercises and obtain results that are meaningful and actionable from the organisation's perspective. The MAF+ assessments are designed to build upon this existing knowledge and potentiate it through the advisory provided by the supporting partners from WP6. Second, the underlying objective of the MAF+ is to empower innovators and increase their competitiveness by getting them acquainted with business development and marketing concepts. The premise is that getting the innovator to know and use these concepts will result in a more conscientious consideration of the needs and wants of the target market during the product development process. The expected outcome is an increased awareness on the importance of demand-driven innovation that can ultimately result in products better responding to market demand.

As briefly pointed out above, the main role of the supporting partner is to potentiate the knowledge held by the innovator and streamline the efforts that are fed into the assessment. The supporting partner does this by providing advice and guidance on how to complete the individual exercises and interpret the results. Supporting partners are members of the business development team in BRIGAIID (i.e. WP6) who have received specialized training on the application of the MAF+ and in some cases have been involved in the development of the framework.

The third user type, the observer of the process, was defined with the purpose of giving third parties chosen by the innovator or supporting partner (under consent of the innovator) access to the progression of the assessment and its results. Their main responsibility is to follow the process and provide punctual feedback from an outsider's perspective when this is requested. Examples of

individuals falling into this user type could include: investors, consultants, board members, members of the firm who are interested but not directly involved in the development and decision-making on the innovation, BRIGAD members receiving training on the application of the MAF+, and other guests.

3. Accessing the MAF+ portal

Invitation to create a user account

The innovators' first visit to the MAF+ online portal will take place after receiving an invitation via email from the supporting partner. The invitation will include a link to the MAF+ portal's landing page (maf.brigaid.eu), which displays a short introductory text highlighting the framework's main objectives and an image outlining its overall structure (see Fig. 1). This web page will also have a link to the main log in page where the innovator can sign in using his credentials from the Climate Innovation Window (CIW) or create a new account.

Main Section Objective	Exercise
Setting the scene	Business Model Canvas I PESTEL analysis
Identifying and selecting a target group	Value Proposition Canvas Market Segmentation Attractiveness Scorecard
Assessing market attractiveness	Market Size estimation Market Growth Rate estimation Cost-Volume-Profit Analysis
Analysing the competition	Porter's 5 Forces Heat Map
Identifying priority actions	Advanced SWOT Analysis
Wrapping up the assessment	Business Model Canvas II

Figure 1. Structure of the MAF+ assessment showing exercises grouped into sections.

User accounts at *maf.brigaid.eu*

As described earlier, users can register as an innovator, supporting partner, or observer. These different user types have different rights and levels of access within the portal (e.g. innovator and supporting partner have editing rights, observers only have commenting rights). User accounts can be linked to one or more innovation profiles and vice versa.

Previous to starting an assessment using the MAF+, innovators have to create profiles for their innovations on the CIW (www.climateinnovationwindow.eu). This means that they will already have a user account and that the general specifications of their innovations will be readily available at that website. The MAF+ online portal has been designed so that innovators can use their same credentials to log in at maf.brigaid.eu. This will automatically populate their “My Innovations” web page with all innovations they have previously loaded on to the CIW (see Figure 2). Users who do not have an account for the CIW (expectably supporting partners and observers) will have to create a new account directly at the MAF+ portal and be assigned by the web administrator to the innovation(s) whose assessment they will be following.

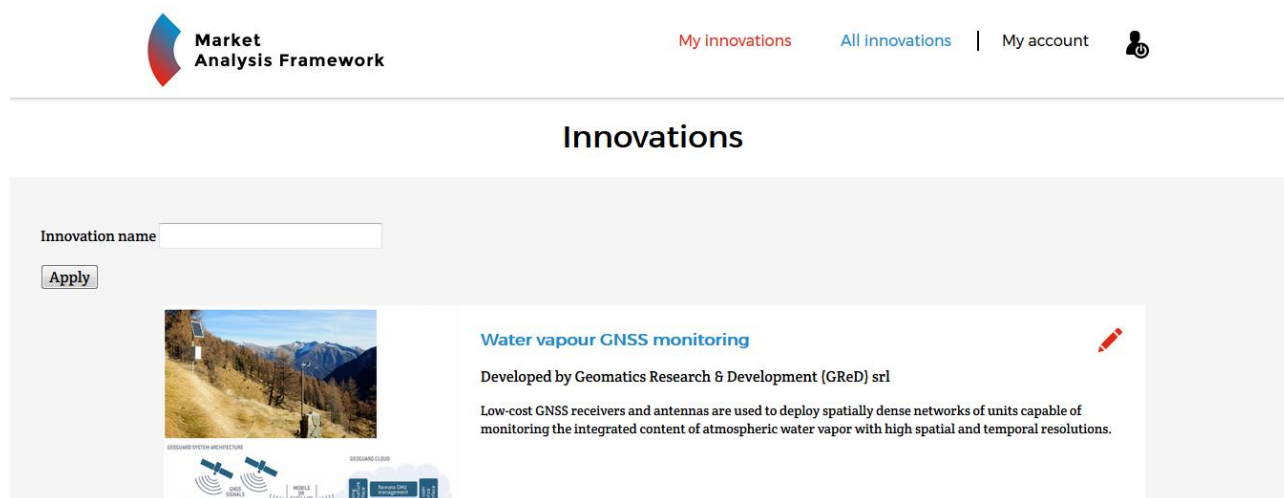


Figure 2. “My Innovations” page in the MAF+.

Once logged in, the innovator can start an assessment. To do this he must go to the “My Innovations” page and click on the innovation profile of interest. This leads to the innovation profile page which displays the general specifications of the selected innovation. The user must simply click on the “Start Assessment” button on the top right corner to access the timeline and exercises (see Figure 3).

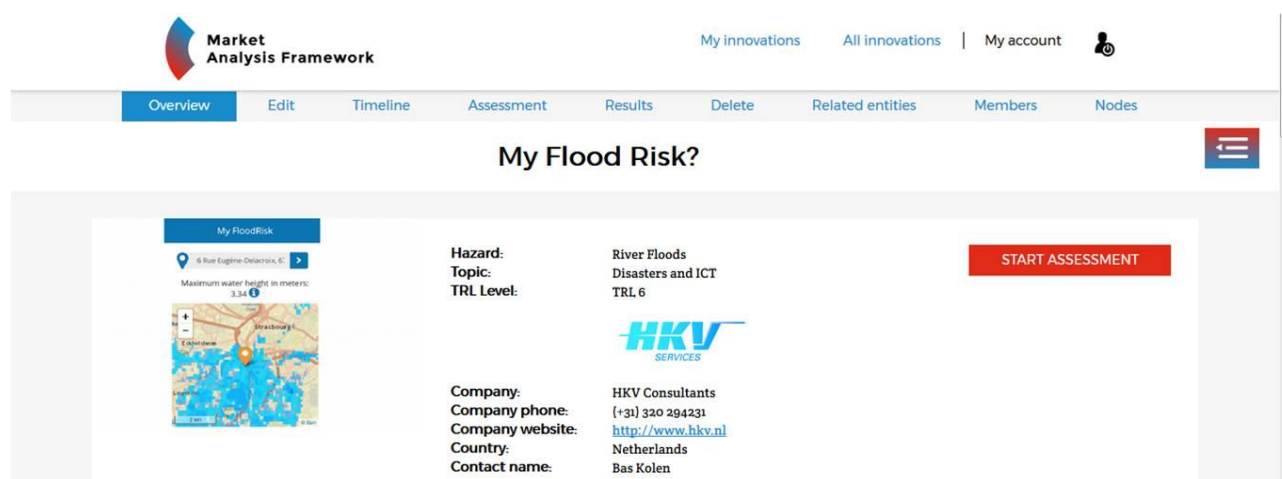


Figure 3. Innovation profile page.

Assessment timeline and workflow

An assessment using the MAF+ is associated with a total time commitment by the innovator of 12-24 hours over 6-8 weeks. This entails a 1-2 hour phone call/teleconference with the supporting partners and observers fortnightly (for the 6-8 week period) plus 2-4 hours preparation/information collection (desk research).

When an innovator starts an assessment in the MAF+ a timeline is created. This page shows an editable timeline which starts off with the starting date of the assessment and gives innovators and supporting partners the option to adjust the dates when each batch of exercises will be completed and when each of the teleconferences will take place (see Figure 4).

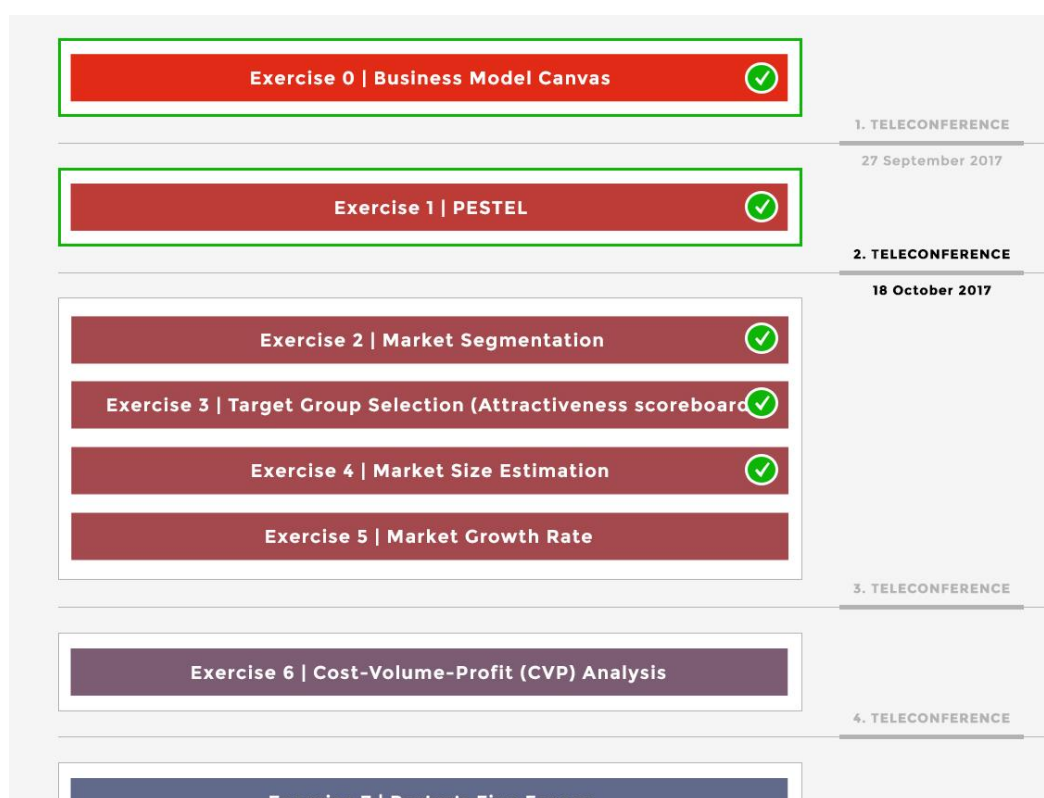


Figure 4. Excerpt of the assessment timeline page.

4. MAF+ Section 1 – Setting the scene

Work on Section 1 of the MAF+ takes place during the first teleconference with the supporting partner. The section includes *Exercise 0 – Business Model Canvas*, and *Exercise 1 – PESTEL Analysis*.

Business Model Canvas

Once she has landed on the business model canvas exercise page, the innovator is presented with instructions on how to complete the exercise and a canvas template where to fill in the

information necessary to describe the business model for the innovation being assessed (see example in Figure 5). The template has 9 main elements where the innovator is able to insert alphanumerical data to describe: a. The value proposition of her business idea; b. The customer segments targeted; c. The distribution channels necessary to connect and communicate with the target customers; d. The types of customer relationships to be developed; e. The revenue model for the business; f. The key resources necessary to operate the business; g. The key activities carried out by the business; h. The key partnerships to build upon; i. The cost structure of the business.

H Key partners Who are you reliant on to carry out your key activities and deliver value to your customers?	G Key activities What activities must you complete to deliver your value proposition to your customers?	A Value Propositions What problem do we solve for our customer, what value do we bring them, and how do we differentiate ourselves from the competition? +	D Customer relationships How does the customer interact with you throughout the sales process (and after)? Direct, person to person Newsletter	B Customer segments Who are our most important customers? Farmers Local policy/regulators
F Key resources What strategic assets do you need to deliver value (by carrying out your key activities)?		C Channels What is the best way to reach customers – to raise awareness, enable them to purchase, and deliver our good/service?		
I Cost structure What are the costs of running your business, and are they fixed or variable?			E Revenue streams How do all of the above building blocks come together to provide you with revenue?	

SAVE CHANGES SAVE CHANGES AND GO TO NEXT EXERCISE >

Figure 5. Business Model Canvas template in the MAF+.

Partial work on the business model canvas template, or any other exercise, can be saved by clicking the “SAVE CHANGES” button. This allows for the template to be completed over multiple sessions. To access a previously started assessment after closing a session, the innovator must sign into the portal, navigate to the respective innovation profile, hover over the list of exercises icon in the top right corner of the page or click on the “Timeline” tab and select the respective exercise to resume. Once the innovator is done inserting all data into the template, she can save and close the exercise by clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE>” button. A green checkmark is displayed next to the titles of the completed exercises in the timeline and the list of exercises.

PESTEL Analysis

In *Exercise 1 – PESTEL Analysis* the innovator is presented with instructions on how to complete the exercise and a table with pre-filled text in the first column, hover-over examples for each row and empty fields in a second column for text input (see Figure 6). The text in the first column briefly describes each of the six PESTEL elements and the hover-over buttons list examples for them

(see red circles labelled “E”). In the second column the innovator can insert alphanumerical data to describe the six elements for the specific case of the assessment being carried out (i.e. political, economic, social, technological, environmental and legal conditions in the area of interest). An annotating function is available (see blue bubbles labelled with numbers next to the second column) for supporting partners and observers to provide feedback on the innovator’s responses.

Market Analysis Framework

My innovations | All innovations | My account

P **Political conditions** refer to all existing or potential government policies and strategies (local, regional, national or supra-national level) that could impact your organization.

E EU: We see no political factor that can impact, negatively, implementation of such solution in areas that may be affected (more so in ones that had been already affected in the past); on the contrary, we believe that Flip-Flap dam once implemented and then needed (put to use), the political group that initiated it will have benefits to reap. On this same line we believe that some lobbying backed by damages done in the past compared with the cost of the implementation and benefits for not having to deal with such situations in the future may determine funds allocation. We believe that broader public will embrace this preventive approach.

E **Economic conditions** include any issues related to the economy (local, national, and global) in your organization's home or target markets that could affect your organization and its success.

We believe that implementation of this solution in any urban area that was ever affected by floods (Prague, Warsaw, etc.) would have cost less than the remedy of floods aftermath. We suggest on having a such study *Between 1998 and 2004, Europe suffered over 100 major damaging floods, including the catastrophic floods along the Danube and Elbe rivers in summer 2002. Severe floods in 2005 and 2007 further reinforced the need for concerted action. Since 1998 floods in Europe have caused some 700 deaths, the displacement of about half a million people and at least €25 billion in insured economic losses.* (http://ec.europa.eu/health/climate_change/extreme_weather/flooding/index_en.htm)

S **Soci the the prod**

- Demographic changes, such as aging population or increase in education levels
- Change in preferences, such as growing interest in environmental issues
- Change in attitudes, values, or ethics, e.g. re. privacy, communal action, or environmental protection

There is a continuous growth of population in urban areas so such flood damages will effect more and more people as far as numbers go.

Please see also the fatalities caused by floods themselves or flood related incidents, losses that cannot be quantified!

We also believe that public attitude will be very positive when presented such an approach (this contributing heavily on government spending approval for such projects) versus aftermath expenditures even more so that investment is less than...

SAVE CHANGES **SAVE CHANGES AND CLOSE >**

Figure 6. Excerpt of the PESTEL Analysis template in the MAF+.

Partial work on the PESTEL Analysis template can be saved by clicking the “SAVE CHANGES” button. Once the innovator is done inserting all data into the template, she can save and close the exercise by clicking the “SAVE CHANGES AND CLOSE>” button. This action closes the work on Section 1 of the assessment.

5. MAF+ Section 2 – Identifying and selecting a target group

Work on Section 2 of the MAF+ takes place during the second teleconference with the supporting partner. The section includes *Exercise 2 – Value proposition*, *Exercise 3 – Market Segmentation* and *Exercise 4 – Target group selection (Attractiveness scorecard)*.

Value proposition

In *Exercise 2 – Value proposition* the innovator is presented with instructions on how to complete the exercise and a template with text entry fields where he can define the features, benefits and experiences associated with the innovation and assess the wants, needs and fears of the target

customer. The template also includes a text entry field to note down the potential substitutes to the innovation that the target customer could use in order to address its wants, needs and fears.

The figure shows a digital form for a value proposition canvas. It is divided into several sections with colored headers:

- Benefits (blue header):** Contains two text boxes with the text "Water planning made easier" and "Maps aid planning".
- Experience (blue header):** Contains a text box with the text "Easy to use".
- Wants (red header):** Contains a text box with the text "Regular water".
- Needs (red header):** Contains a text box with the text "...".
- Fears (red header):** An empty text box.
- Substitutes (blue header):** An empty text box.
- Value Proposition Statement (blue header):** A large empty text area at the bottom.

In the center of the form is a blue box with a white icon of a flask and bubbles. At the bottom of the form are two buttons: "SAVE CHANGES" (red border) and "SAVE CHANGES AND GO TO NEXT EXERCISE >" (blue border).

Figure 7. Value proposition template in the MAF+.

Lastly, the template includes a text entry field where the innovator can formulate a clear and concise value proposition statement based on the elements considered above. As the PESTEL analysis exercise, the Value Proposition Canvas has an annotating function for supporting partners and observers to provide feedback on the innovator's responses. By clicking the "SAVE CHANGES AND GO TO NEXT EXERCISE" button, the innovator goes on to *Exercise 3 – Market Segmentation*.

Market segmentation

In the market segmentation exercise, the innovator is presented with instructions on how to complete the exercise, and a table showing a catalogue of stakeholder groups, their respective descriptions and hover-over examples (see Figure 8). The innovator has to select as many stakeholder groups from the table as are relevant to the innovation being assessed and include new ones which might not be listed already (when doing so, the innovator can add text into the description field of each additional stakeholder group). The innovator can provide a justification for

each selection in the third column of the table. This justification is not compulsory to complete the exercise and continue the assessment. An annotating function is also available here for supporting partners and observers.

Stakeholder group	Description	Reasons for decision
<input checked="" type="checkbox"/> Local authorities	Local administrations and authorities such as city councils play an important role in building local resilience and responding to drought, floods, and extreme weather events (ICLEI and CEPS, 2013). Local authorities can act both as service providers and as regulators. Furthermore, local authorities have responsibility for the water quality and quantity security of their communities and their industrial base (GWP, 2013).	E 0
<input type="checkbox"/> Regional authorities	Regional administrations and authorities, such as states and river basin management administrators, are responsible for adaptation planning and implementation (ICLEI and CEPS, 2013). Furthermore, local authorities have responsibility for the water quality and quantity security of their communities and their industrial base (GWP, 2013).	E 0
<input type="checkbox"/> National authorities	Ministries and other government institutions (e.g. Health and environment ministries, as well as those responsible for major infrastructure and agriculture (IPCC, 2014)). responsible for climate policy, as well as managing and responding to droughts, floods, and extreme weather events (European Commission, 2013). Member States are obliged	E 0

SAVE CHANGES SAVE CHANGES AND GO TO NEXT EXERCISE >

Figure 8. Excerpt of the Market Segmentation template in the MAF+.

As with the previous exercises, the market segmentation can be completed over multiple sessions. By clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE” button, the innovator goes on to *Exercise 4 – Target group selection (Attractiveness scorecard)*.

Target group selection (Attractiveness scorecard)

In *Exercise 4 – Target group selection (Attractiveness scorecard)* the innovator is presented with instructions on how to complete the exercise and a number of tables (one per each stakeholder group selected in exercise 3) showing a list of 5 pre-defined criteria.

The innovator is then prompted to rate each of the criteria according to their accuracy using a likert scale (a rating of 1 denotes the statement is totally inaccurate, a rating of 5 denotes the statement is totally accurate). Additionally, the innovator is invited to provide a comment in the respective field to justify and further describe their rating. This justification is not compulsory to complete the exercise and continue the assessment. An annotating function is available for supporting partners and observers to provide feedback on the innovator’s input.

Out of the sum of the ratings for the 5 criteria, the system calculates a total score and develops a ranking of the stakeholder groups evaluated, both of which are displayed at the top of the page (see Figure 9). The two groups with the highest ranking will be the target customer groups considered in the following parts of the assessment.

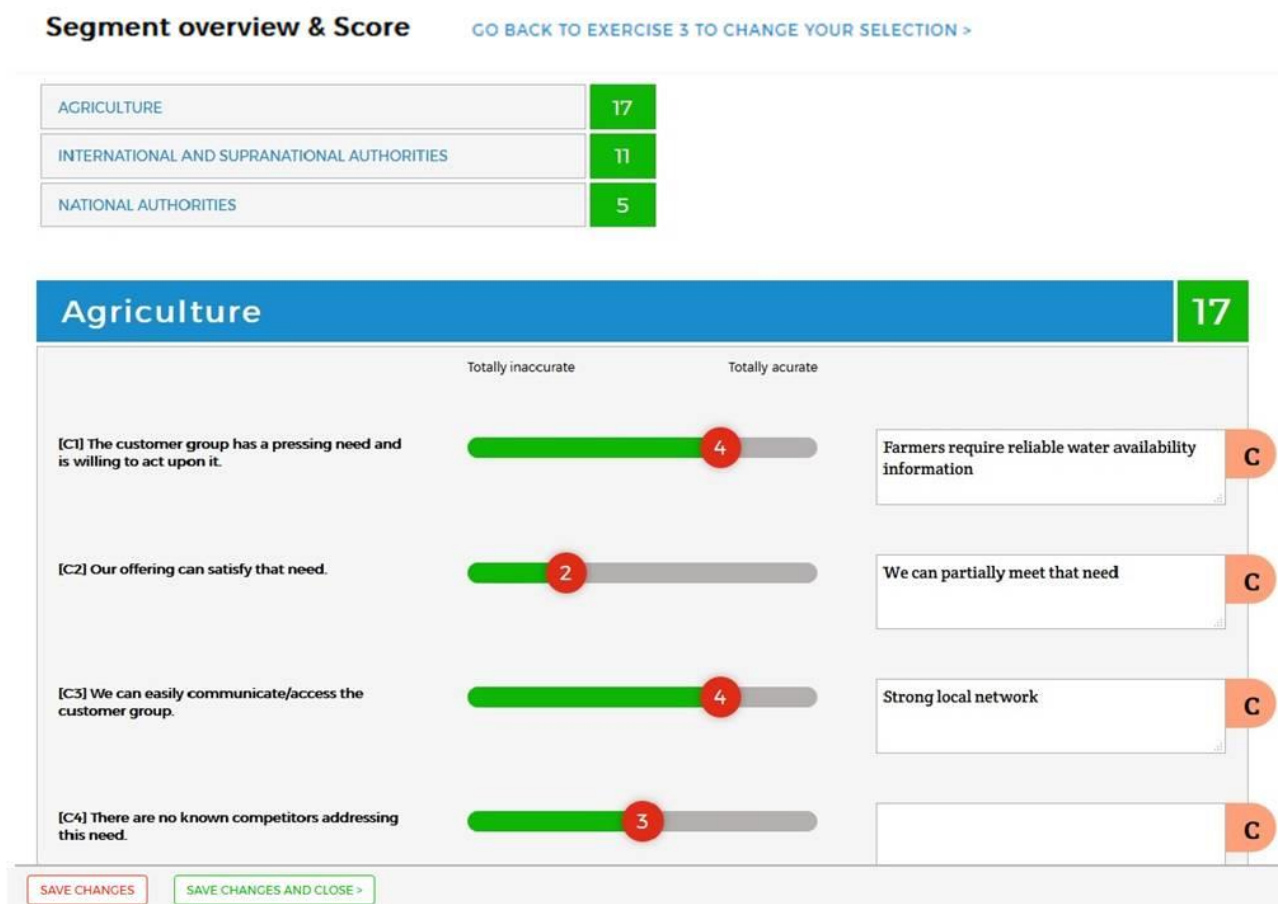


Figure 9. Excerpt of the Attractiveness Scorecard template in the MAF+.

Once the innovator is done inserting all data into the template, he can save and close the exercise by clicking the “SAVE CHANGES AND CLOSE>” button. This action closes the work on Section 2 of the assessment.

6. MAF+ Section 3 – Assessing market attractiveness

Work on Main Section 3 of the MAF+ takes place during the third teleconference with the supporting partner. The section includes *Exercise 5 – Market size estimation*, *Exercise 6 – Market growth rate* and *Exercise 7 – Cost-Volume-Profit Analysis*.

Market size estimation

In *Exercise 5 – Market size estimation* the innovator is presented with instructions on how to complete the exercise and spreadsheet tables where she will input data for the calculations (see

Figure 10). The user is then prompted to add text into the “Location” and “Comments” fields, select a year from the “Year of data collection” drop-down list, and enter numbers into the “No. of Customers”, “Penetration Rate (%)” and “Price (€)” fields. The innovator has the option of including additional locations by clicking the “+” button, which will add rows at the bottom of the table. Filling in the comments field is not compulsory to complete the exercise and continue the assessment. The system then calculates the “Potential Market Size” and the “Potential Monetary Value” and displays the results in the respective columns. An annotating function is available for stakeholders and observers.

Local authorities							
Location	Year of data collection	No. of customers	Penetration rate (%)	Potential market size	Price (€)	Potential monetary value	Comments
Europe	2016	26	30.00	8	8000	64000 €	
Australasia	2017	5	50	3	5000	15000 €	
TOTAL				11		79000 €	

[SAVE CHANGES](#)
[SAVE CHANGES AND GO TO NEXT EXERCISE >](#)

Figure 10. Market size estimation template in the MAF+.

By clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE” button, the innovator goes on to *Exercise 6 – Market growth rate*.

Market growth rate

Here the innovator is presented with instructions on how to complete the exercise and spreadsheet tables where she will input data for the calculations. The spreadsheet tables are prefilled with data from the “Location” field of exercise 5. For the rest of the fields in either the “Market Size in Reference Year” or the “Market Size in the Year of Interest” columns, the innovator has the option of loading the data calculated in the previous exercise by clicking a button labeled “USE EXERCISE 5 DATA” or alternatively using custom data for the calculations. The innovator must then select the year of reference and year of interest from the respective drop-down lists. The system then calculates the annual market growth rate results for each table. A “Comments” field is available for communicating assumptions and other clarifications (filling this in is not compulsory to complete the exercise and continue the assessment). An annotating function is also available in this exercise for supporting partners and observers.

To allow for estimated projections, the MAF+ also offers the capability of calculating what the market size would be based on a defined baseline and an assumed growth rate. This can be useful to develop growth curves for indicative purposes.

Local authorities

Location	Market size in reference year	Year of reference	Market size in year of interest	Year of interest	Market growth rate (annual)	Comments
Europe	62400 €	in 2016	73000.00 €	in 2017	17%	
Australasia	12500 €	in 2017	9000 €	in 2018	-28%	

SAVE CHANGES SAVE CHANGES AND GO TO NEXT EXERCISE >

Figure 11. Market growth rate template in the MAF+.

By clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE” button, the innovator goes on to *Exercise 7 – Cost-Volume-Profit Analysis*.

Cost-Volume-Profit Analysis

In *Exercise 7 – Cost-Volume-Profit Analysis* the innovator is presented with instructions on how to complete the exercise and a spreadsheet (see Figure 12).

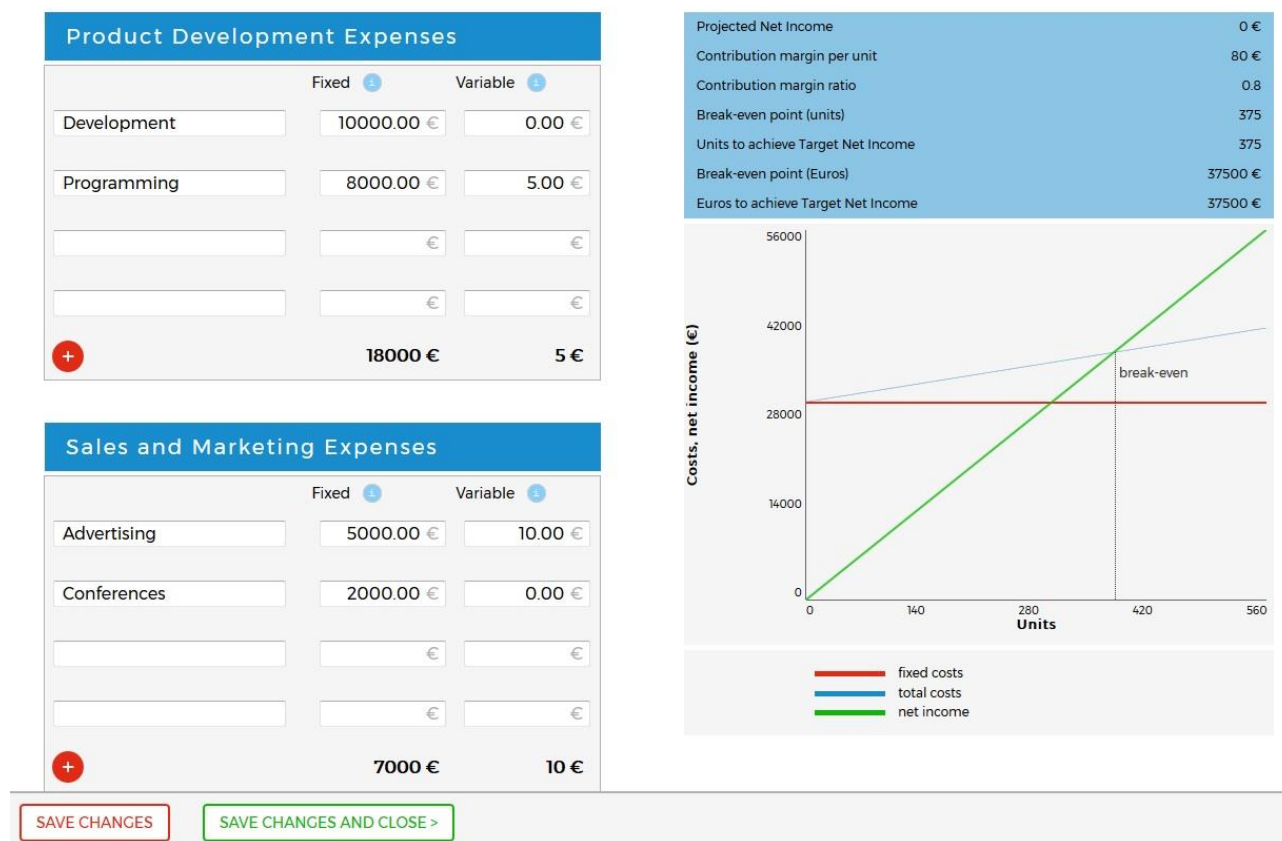


Figure 12. Excerpt of the CVP Analysis template and graph in the MAF+.

The first section of the spreadsheet shows a table with pre-defined cost categories grouped into "Product Development Expenses", "Sales and Marketing Expenses", and "General Expenses". The innovator can include additional items under each category by clicking the "+" button. The innovator can enter numerical data into two columns labeled "Fixed" and "Variable" which are located to the right of each cost category and allow the user to distinguish between the two types of expenses. A simple sum of all the entries in each of these two columns is calculated by the system and displayed in the last row of the table. The next section of the spreadsheet shows a series of tables used to make sales projections, calculate contribution margins and breakeven points. These tables allow the innovators to insert numeric data for the calculations, run some calculations themselves, and hold the input data for the plotting of a CVP graph. The CVP graph displays the fixed and total costs against the revenues and thus provides a clear visualization of the breakeven point. This exercise allows the user to run sensitivity analyses with pricing and sales projections in order to enhance the calculation of the monetary value of the market (*Exercise 5 – Market size estimation*) in later iterations.

Optional extension of the exercise:

By using other metrics such as Net Present Value (NPV), or Internal Rate of Return (IRR) one can measure the profitability of a project over the long-term. A positive NPV indicates that the projected earnings generated by a project or investment (in our case an innovation) exceeds the anticipated costs. Generally, an investment with a positive NPV will be profitable and one with a negative NPV will result in a net loss. If they wish to do so, there are two additional inputs required to use this method:

1. Any other source of revenue they expect to receive (such as subsidies),
2. A growth rate, which represents the compounded annualized rate of growth of a project's revenues, earnings. Basically, it shows how well we expect a project or investment to do in the future.

Also, users will be able to perform a sensitivity analysis which will show how much or how little metrics, such as NPV, IRR or Break-Even point, are affected by the variables they are constructed from. As a first simulation exercise, each of the variables will be altered by $\pm 10\%$ and $\pm 20\%$ from the original input values *ceteris paribus*. Graphs such as the example figure below for NPV will visualize the effect of these changes with steeper lines, representing the variables that are more influential to each metric. With this method the user will get an idea of which variables affect profitability indices the most and focus his/her attention on those.

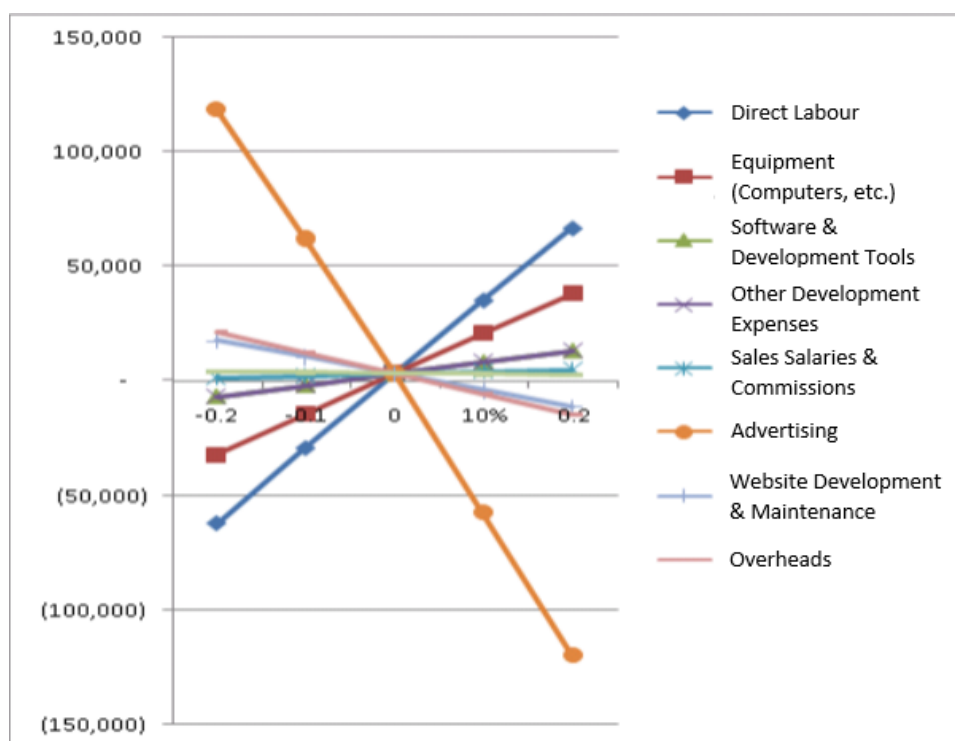


Figure 13. Optional sensitivity analysis graph for the Net Present Value of an innovation.

Once the innovator is done with exercise 7, she can save and close the exercise by clicking the “SAVE CHANGES AND CLOSE>” button. This action closes the work on Section 3 of the assessment.

7. MAF+ Section 4 – Analysing the competition

Work on Section 4 of the MAF+ takes place during the fourth teleconference with the supporting partner. The section includes *Exercise 8 – Porter’s Five Forces* and *Exercise 9 – Heat Map*.

Porter’s five forces

In *Exercise 8 – Porter’s Five Forces* the innovator is presented with instructions on how to complete the exercise and a table with prefilled text in the first column, hover-over examples in each row and a second column with entry fields for the innovator to enter text data. In this exercise, the innovator is shown the 5 different forces, definitions and examples, and is asked to identify representations of each of these forces in his own business situation. The text entered is automatically displayed by the system in the diagram shown in Figure 14. An annotating function is available for supporting partners and observers.

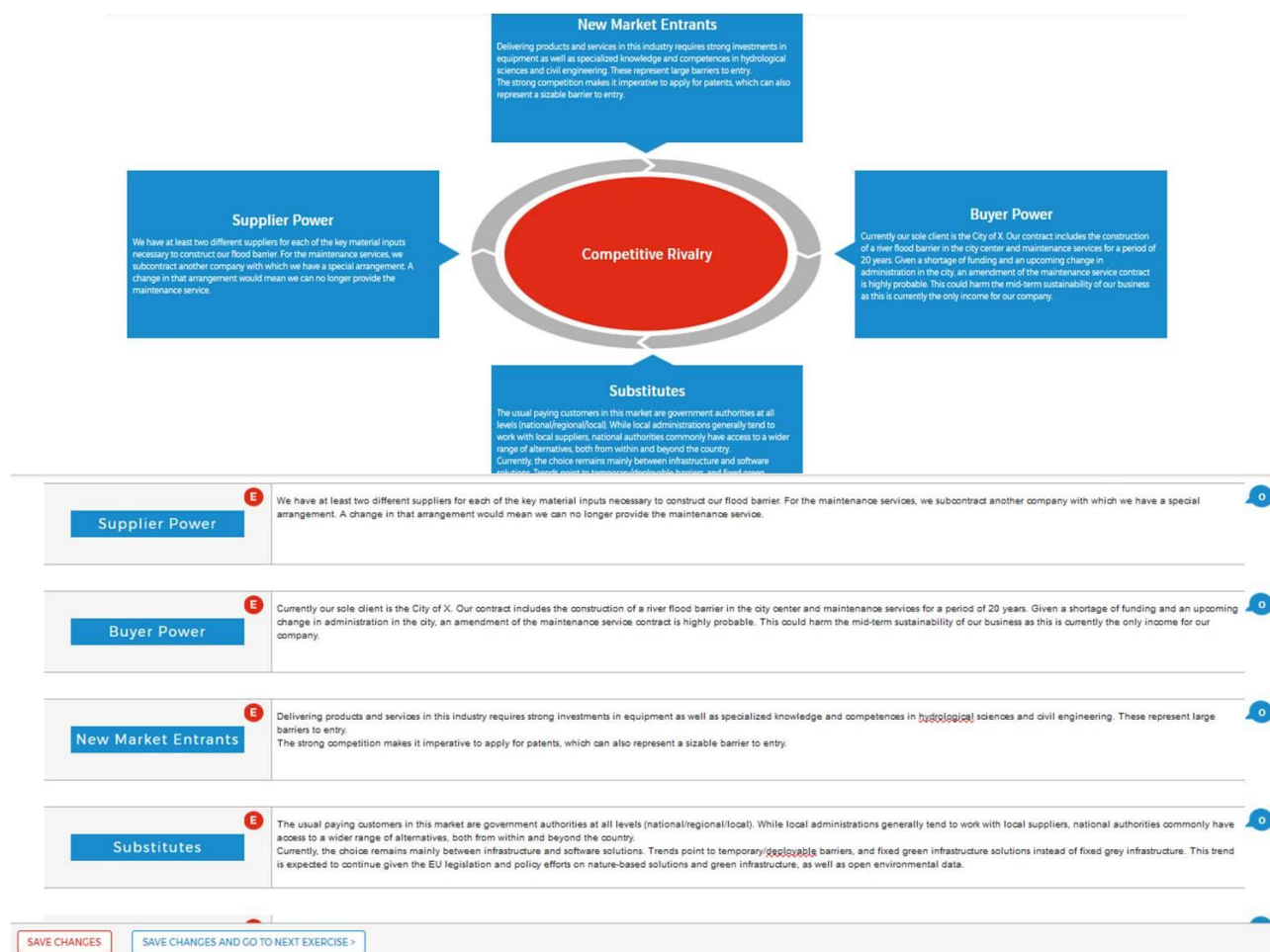


Figure 14. Porter's five forces template and diagram in the MAF+.

By clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE” button, the innovator goes on to *Exercise 9 – Heat Map*.

Heat Map

Here, the innovator is presented with instructions on how to complete the exercise and a table to enter alphanumerical data on “Assets and Competencies” of the competitors identified in the Porter's five forces exercise as well as “Product Features” of the competitors' products. The assets and competencies of the competitor organisations and the features of the competing products are organised into two categories: “Key for success” and “Secondary importance”. In this exercise the innovator enters text in the “Assets and competencies/Product features” column and numerical data in each of the Competitor/Product columns. The innovator can add as many asset rows and competitor columns into the table as necessary. The innovator must also evaluate his own innovation and his organization, which are displayed in the first column, for comparative purposes. Once the innovator has defined the key and secondary assets/competencies and features, then he can enter numerical ratings into the table using a 3 point scale where 1=below average, 2=average

and 3=above average. Using a functionality analog to conditional formatting in Excel, the colors of each cell in the table change depending on the rating given by the innovator (see Figure 15).



Figure 15. Excerpt of the Heat Map template in the MAF+.

Once the innovator is done with exercise 9, he can save and close the exercise by clicking the “SAVE CHANGES AND CLOSE>” button. This action closes the work on Section 4 of the assessment.

8. MAF+ Section 5 – Identifying priority actions

Work on Section 5 of the MAF+ takes place during the fifth teleconference with the supporting partner. The section includes *Exercise 10 – SWOT analysis* and *Exercise 11 – SWOT priority score*.

SWOT analysis

In *Exercise 10 – SWOT analysis* the innovator is presented with instructions on how to complete the exercise and a series of text entry fields. The first two fields at the top of the template allow the innovator to define one or two events that have had a significant impact on her business and use that information to frame the exercise. The following fields are organized into four quadrants, respectively labeled “Strengths”, “Weaknesses”, “Opportunities” and “Threats” (see Figure 16). Hovering over each of the quadrants’ labels, the innovator is presented with a set of sample questions to facilitate the formulation of text for each quadrant. The innovator will add text creating

a list in each of the quadrants. These lists are carried over automatically into *Exercise 11 – SWOT priority score*.

STRENGTHS	WEAKNESSES
Expert team	Low marketing knowledge/skill base
Excellent design skills	No international contacts
Great contacts in water sector	

OPPORTUNITIES	THREATS
Large Spanish market faces similar challenges	International tools such as Water World may go local
	Increasing oversight from EU for water abstractions

SAVE CHANGES SAVE CHANGES AND GO TO NEXT EXERCISE >

Figure 16. SWOT analysis template in the MAF+.

By clicking the “SAVE CHANGES AND GO TO NEXT EXERCISE” button, the innovator goes on to the SWOT priority score exercise.

SWOT priority score

Here, the innovator is presented with instructions on how to complete the exercise and the entries to the previous SWOT analysis with two input sliders next to each item in the list. The sliders are labeled “Impact Level”, and “Impact Probability”. A column to the right labeled “Priority Score” displays the results of the exercise. Using the sliders, the innovator ranks each strength, weakness, opportunity and threat according to how impactful they could be to their business and to how probable the impact is to happen. Based on these inputs the system calculates and displays the results in the priority score column. The output of the exercise should be used by the innovator to define a series of short, medium and long term actions to move along the path to commercialization and load them into a “MAF+ list of actions” page.

Category	Item	Impact Level	Impact probability	Priority Score
STRENGTHS	Expert team	High	High	12
	Excellent design skills	Low	Medium	2
	Great contacts in water sector	High	Medium	9
WEAKNESSES	Low marketing knowledge/skill base	Low	Medium	9
	No international contacts	Low	Medium	2
OPPORTUNITIES	Large Spanish market faces similar challenges	Medium	High	8
THREATS	International tools such as Water World may go local	Low	Medium	4
	Increasing oversight from EU for water abstractions	Low	Medium	9

SAVE CHANGES SAVE CHANGES AND CLOSE >

Figure 17. SWOT priority score template in the MAF+.

Once the innovator is done with exercise 11, she can save and close the exercise by clicking the “SAVE CHANGES AND CLOSE>” button. This action closes the work on Section 4 of the assessment.

9. MAF+ Section 6 – Wrapping up the assessment

Work on Section 6 of the MAF+ takes place during the sixth and final teleconference with the supporting partner. This section entails a revision of *Exercise 0 – Business Model Canvas* based on the information gathered and lessons learned in the MAF+ assessment.

Business Model Canvas revision

To wrap up the MAF+ assessment the innovator is presented with the version of the business model canvas he filled in at the very start of the assessment and is presented with instructions to review and revise it based on the information gathered in the earlier exercises.

As the previous exercises, the business model canvas revision can be carried out over multiple sessions by clicking the “SAVE CHANGES” button. Once the innovator is done with the exercise, he/she can save and close the work by clicking a “SAVE CHANGES AND CLOSE” button. This action closes the work on Section 6 of the assessment.

10. Future updates of this report

This report showcases the work on the preparation of the MAF+, carried out up to M18 of the BRIGAD project. However, the business development activities pertaining to the first innovation cycle (application of the MAF+ and elaboration of business plans) are scheduled to take place between M19 and M22. This document will thus be updated in M33 to include the business plan documents resulting from the application of the MAF+ and other WP6 activities to take place during the first and second innovation cycles. It will be updated once more in M48 once the third innovation cycle has been completed, respectively.

It is expected that during the application of the MAF+ in the innovation cycles feedback will be gathered from the end-users (innovators, supporting partners and observers), Any changes on the online platform resulting from that feedback will be documented in the updated versions of this report.

Annex – MAF+ Templates

The following pages show the templates for the updated framework exercises. These have been prepared during the first year of BRIGAD and applied to study the cases of the frontrunner innovations as a means of initial testing and gap identification.



BRIGAD Market Analysis Framework+

Template for the Business Model Canvas

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Business Model Canvas

Introduction and instructions

The Business Model Canvas visually represents your current or future business model. It captures the key elements of a business plan whilst highlighting the links between components. It encourages a focus on customer value but is thorough; its nine elements cover the essential aspects of a business, including customers, your offer to them, the infrastructure to deliver, and finances.

The Business Model Canvas sets the scene before you begin the MAF+. Running through the Business Model Canvas before embarking on the next exercises will prime you to concentrate on your customers and the value that you offer them; this customer-value focus should guide your

decision making throughout the MAF+. Completing the Business Model Canvas will also identify gaps in your business plan or any lack of clarity in your thinking.

The Business Model Canvas should be completed as a team, as the results will benefit from a variety of perspectives. The aim is to complete the tasks iteratively; post it notes are perfect for capturing ideas quickly. A few final tips: (1) the Business Model Canvas should be a live document (the MAF+ will return to it) – keep a version of it up in your workspace and add to it and edit as you test your assumptions, and clarify your understanding of your customers and the value you offer; (2) avoid generalities and be as explicit, and quantitative as you can be – if there are elements where you can't be specific, come back and edit these after thinking and researching more later.

The building blocks:

1) Customer segments: Who are our most important customers?

- Prioritise and be specific

2) Value propositions: What problem do we solve for our customer, what value do we bring them, and how do we differentiate ourselves from the competition?

- Think: how does your product/service improve the customer's life; why do they choose your offering?¹ Be specific

3) Channels: What is the best way to reach customers – to raise awareness, enable them to purchase, and deliver our good/service?

- Think about it from the customer's perspective – how will they find out about your offer? Describe marketing and sales channels

4) Customer relationships: How does the customer interact with you throughout the sales process (and after)?

- Do you offer personalised support and co-create solutions with clients or use automated service - which is best for your business?

5) Key resources: What strategic assets do you need to deliver value (by carrying out your key activities)?

¹ The value proposition canvas can be useful here: <https://www.peterjthomson.com/2013/11/value-proposition-canvas/>

6) Key activities: What activities must you complete to deliver your value proposition to your customers?

- Prioritise activities here: try and identify which processes and actions are truly crucial to delivering your value proposition and earning revenue.
- Key resources can be categorised as human, financial, physical, or intellectual

7) Key partners: Who are you reliant on to carry out your key activities and deliver value to your customers?

- Identify current (and potential) partners and suppliers whose you need to help your customers

8) Cost structure: What are the costs of running your business, and are they fixed or variable?





- Identify all the costs associated with your business and think about how you could minimise them; remember to link them to key activities to ensure they are relevant costs.

9) Revenue streams: How do all of the above building blocks come together to provide you with revenue?

- Be specific and quantitative; also, link the revenue streams to customer segments, value propositions, and channels.

References:

Osterwalder, A., Pigneur, Y. (2010) Business Model Generation – A Handbook for Visionaries, Game Changers and Challengers. John Wiley and Sons, Inc., Hoboken, New Jersey.

7) Key Partners	6) Key Activities	2) Value Propositions 	4) Customer Relationships 	1) Customer Segments 
	5) Key Resources		3) Channels 	
8) Cost Structure		9) Revenue Streams		



BRIGAD Market Analysis Framework+

Template for the PESTEL Analysis

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

PESTEL Analysis

Introduction and instructions

The PESTEL framework is a strategic analysis tool used to examine the external conditions that surround an organization. It allows organizations to consider the ‘big picture’ in which they operate, thus enabling them to identify factors that could influence their strategy development and decision-making (Issa et al., 2010).

The main objective of a PESTEL analysis is to identify the current opportunities that the organization could exploit and the threats that it should avoid. In a PESTEL analysis, the external environment is divided into six main types of external conditions: Political, Economic, Social, Technological, Environmental and Legal. Each of these six conditions are then analyzed individually to identify any indication of changes that could represent an opportunity or a threat to the organization and its activities. These changes in the external conditions may be already ongoing or expected to happen in the future (Gillespie, 2011).

It is recommended that the PESTEL is completed by a group of individuals from within the organization, ideally from different departments or holding different skills and knowledge. The group should consider each of the six PESTEL conditions in turn, noting down potential external issues under each – both positive and negative – that could affect the

innovation's success. Once this has been done, the issues listed should be prioritized in order of how likely they are to occur and how large their impact would be. The final result will be a list of key external influences that could affect the organization - whether external opportunities or threats.

The PESTEL analysis does not require proposing solutions or possible responses to the identified changes in external conditions. Also, deciding whether an issue falls into one box or another is not crucial, as long it is listed somewhere in the sheet (Cadle et al, 2010). Finally, the respondent should choose a geographical focus that matches the potential market for the innovation.

In the context of the MAF+, the results of the PESTEL analysis will feed into the Advanced SWOT Analysis found later in the framework.

	Description	Examples	Issues identified by the innovator (bullet points or flowing text)
P	Political conditions refer to all existing or potential government policies and strategies (local, regional, national or supra-national level) that could impact your organization.	<ul style="list-style-type: none"> • Current government climate change and adaptation policy • Infrastructure, procurement, environmental policy • Government support or subsidies likely • What are political priorities, both of the current government and the broader public 	
E	Economic conditions include any issues related to the economy (local, national, and global) in your organization's home or target markets that could affect your organization and its success.	<ul style="list-style-type: none"> • Interest rates and predicted trends • Economic growth • Inflation and currency exchange rate trends • Access to funding and loans • Government and consumer spending 	

S	Social conditions are those that arise from the side of consumers and can influence the demand for your organization's products and services.	<ul style="list-style-type: none"> • Demographic changes, such as aging population or increase in education levels • Change in preferences, such as growing interest in environmental issues • Change in attitudes, values, or ethics, e.g. re. privacy, communal action, or environmental protection 	
T	Technological conditions cover all technological developments that could affect your organization, including both industry/market-specific developments and general trends.	<ul style="list-style-type: none"> • Technological developments in your industry • Do competitors have more technologically-advanced offerings • Important and relevant general trends (e.g. increased smartphone penetration, IT connectivity, online sales) 	
E	Environmental conditions include all ecological or environmental issues that could affect your business.	<ul style="list-style-type: none"> • Climate change impacts in your target markets • Likelihood of extreme weather events such as drought, flooding, heat wave etc. impacting you/your customers • Ongoing availability of important environmental input e.g. clean water 	

L	Legal conditions include all potential changes to the legal environment in which your organization operates.	<ul style="list-style-type: none">• Consumer laws• Competition law• Employment law• Health and safety legislation• National level and international (European) level	
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References:

Cadle, James, Debra Paul, and Paul Turner (2010) Business Analysis Techniques. British Informatics Society Limited (BISL), Swindon.

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BRIGAD Market Analysis Framework+

Template for the Market Segmentation

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Market Segmentation

Introduction and instructions

Market Segmentation is the first step in the product-specific section of the MAF+. This means that the perspective of the analysis now moves away from the external conditions (i.e. what was done in the PESTEL analysis) and closes in to study the dynamics between the individual innovation and its potential end-users and/or paying customers.

The objective of this exercise is to break down the market into individual groups of actual and potential customers. These groups, also called market segments, can be defined based on similarities in their wants and needs, geographic location, socio-economic profile, and other characteristics. These market segments can then be examined in further detail from the viewpoint of the organization.

In this exercise, a non-exhaustive list of stakeholder groups associated with the market for flood, drought, and extreme weather solutions is presented. The innovators are asked to carefully go through the list and select those groups which, based on their own expectations, could have an interest or need for their product. The shortlisted groups will then be analysed using the Group Attractiveness Scorecard in the next exercise.

Descriptions and examples are given to facilitate the identification of relevant groups.

Category	Stakeholder Group	Description	Examples	Selection
Public	Local authorities	Local administrations and authorities such as city councils play an important role in building local resilience and responding to drought, floods, and extreme weather events (ICLEI and CEPS, 2013). Local authorities can act both as service providers and as regulators. Furthermore, local authorities have responsibility for the water quality and quantity security of their communities and their industrial base (GWP 2013).	City infrastructure, public transport, parks, environment, urban planning, zoning, building permits, and disaster planning departments, municipal water and energy utilities, amongst others (Ecologic Institute et al., 2010).	X
	Regional authorities	Regional administrations and authorities, such as states and river basin management administrators, are responsible for adaptation planning and implementation (ICLEI and CEPS, 2013). Furthermore, local authorities have responsibility for the water quality and quantity security of their communities and their industrial base (GWP, 2013).	Regional environmental agencies, building regulation regulators and policy makers, water managers, water suppliers.	

	National authorities	Ministries and other government institutions (e.g., agencies) at the national level are responsible for climate policy, as well as managing and responding to droughts, floods, and extreme weather events (European Commission, 2013). Member States are obliged to develop flood and drought management plans under the WFD and its daughter directives.	Health and environment ministries, as well as those responsible for major infrastructure and agriculture (IPCC, 2014).	
	International and supranational authorities	The European Union and its institutions create central policy, regulate, and monitor Member States and their response and preparation for droughts, floods, and extreme weather (European Commission, 2013).	Each of the following EU Directorate-Generals: Agriculture and regional development, climate action, energy, environment, health and food safety, maritime affairs and fisheries, regional and urban policy, research and innovation; also: the European Environmental Agency, European Food Safety Authority, European Maritime Safety Agency, European Railway Agency, and the European Aviation Safety Agency.	

Private	Agriculture	The agricultural sector needs clean and affordable freshwater to meet irrigation demands. The rural sector is therefore highly affected by droughts and water quantity issues (European Commission, 2007). It is also highly susceptible to weather uncertainties, including forest fires (World Bank, 2015)	Local individual farmers, large agricultural landowners, cooperatives, dairy, meat, and produce companies, fertilizer companies, (local, national, and European) agriculture representative groups.	
	Electricity industry	Climate change will affect the energy industry at every point in the production chain (Umweltbundesamt, 2011). This includes production, transport, and demand. For example, water is an important input in the production of energy – for power generation and cooling (OECD/IEA, 2012). Accordingly, this sector is susceptible to water shortages and heat waves, which reduce the effectiveness of water cooling.	Energy generators and retailers, gas network operators, transmission system operators, renewable energy associations, and energy equipment manufacturers.	
	Transport sector	The transport sector is a central cog in all global economies and is susceptible to disruption and damage due to extreme weather events and floods (German Federal Government, 2008). Road, rail, air, and water transport are all affected.	Road, rail, air, and open and inland water infrastructure providers and equipment manufacturers, regulators, and shipping and storage companies (EEA, 2014).	

	Manufacturing industry	The manufacturing industry is often highly water intensive and frequently exerts pressures on water quantity (UNW-DPAC, 2011). An example is the chemical industry, which is particularly dependent on water availability and access to raw materials, which will in turn be affected by climate change and the resulting floods, droughts, and extreme weather (Umweltbundesamt, 2011).	Food and beverage manufacturers, raw materials processors, chemical and pharmaceutical manufacturers, consumer goods manufacturers, machinery manufacturers, and many more. Their representative groups and regulators (both local and at national and international levels) are also important.	
	Insurance and re-insurance companies	Insurance companies offer insurance policies to the public to cover damages resulting from extreme weather, floods, and droughts. An insurance company can specialise in a specific type of insurance or offer multiple types. Re-insurance provided by a company is used to provide higher coverage levels to customers when the risk is too high to one insurance company alone (Bank of England, 2015).	Insurance and actuarial associations, insurance companies, regulating authorities.	
	Strategic planners	Strategic planners work for small businesses, large corporations and NGOs and support them by planning long-term growth and development strategies. The outcome of their planning can influence the overall risk of a flood, drought, or extreme weather event. Hence, strategic planners must have a good understanding of these issues and potential risks to make recommendations.	Spatial planners, urban planners, sustainable urban designers, environmental assessment experts.	

	Emergency planners	They perform advanced consultative services in planning, development of emergency and response plans. When an emergency occurs, emergency planners set the appropriate plan into operation and therefore have a direct impact on the realised risks ² .		
	Tourism sector	The tourism sector, which provides consumption goods and services to tourists, is susceptible to water shortages and extreme weather (European Commission, 2007). Areas dependent on winter sports tourism (such as skiing) and coastal tourism are particularly susceptible.	Local tourism activity providers, coastal and mountain accommodation establishments (including hotels and camping grounds), and tourist transport operators.	
	Consultants/Private companies	Environmental consultants or private companies conduct surveys and inform companies about options to reduce negative effects on nature, respectively (Olesen, 2011).		
	Building sector	The building sector, which is responsible for researching, planning, building, and renovating structures, is an important stakeholder. Increases in extreme temperatures and weather, as well as increased likelihood of flooding, will require changes from the sector (German Federal Government, 2008).	Individual builders and building companies, material providers, engineers, architects, plumbers, electricians, energy consultants, associations representing them, and related regulators.	

² In some cases, emergency planning is often carried out by public authorities.

Other	Forestry sector	The forestry sector is highly susceptible to droughts and fires (Italian Ministry for the Environment, Land, and Sea, 2013).	Forest owners, forest planners, forest managers and fire managers.	
	Fisheries	Fisheries are susceptible to extreme weather events. The aquaculture sector in particular is heavily dependent on water availability, and therefore also concerned with droughts (Shelton, 2014).	Ship owners, captains, fishing companies, gear and equipment manufacturers, safety officers, aquaculture farm operators, fisheries regulators, fisheries scientists, and harbour masters.	
	Real estate sector	Property is likely to bear the brunt and cost of a majority of drought, flooding, and extreme weather impacts. Accordingly, the real estate sector is a key stakeholder.	Developers, real estate agents, real estate companies, individual homeowners, real estate companies, and property managers.	
	Civil defence and emergency response organisations	Civil society organisations such as the Red Cross and Civil Defence as well as public services have important roles to play in responding to crisis events such as those resulting from floods, droughts, and extreme weather (Umweltbundesamt, 2011). They are also involved in planning for disaster responses.	(local, national, and international) Red Cross and Civil Defence ³ .	

³ Public sector actors such as police, fire, ambulance, and the military are often important civil defence and emergency response stakeholders.

	General public	The general public refers to individuals living in at-risk areas, which, given the increase in likelihood of floods, droughts, and extreme weather events, is a large and growing group. Especially susceptible to extreme weather are the young and the old (Vasileiadou et al., 2014) and those close to water or the coast (Umweltbundesamt, 2011).		
	Researchers (universities or extramural research institutions)	Researchers work in universities or extramural research institutes. They develop ideas, e.g., on how to measure water flows, create more accurate models, develop alarm systems for floods, prevent droughts, etc.	Universities and other research institutions, scientists, programmers, data analysts, policy advisers, consultants.	
	Environmental organisations	Citizens and/or environmental organisations raise awareness of the effects of certain life-styles and or land-uses and can further education in schools and universities. Environmental organisations provide information for the general public and for practitioners in different areas. They are often very active in publicising issues and mobilising action.	Local environmental groups, and local, national, and international branches of major environmental groups.	
	Recreational groups	Recreational users engage in a number of activities that can be affected by droughts, floods, and extreme weather events and are therefore important stakeholders (Umweltbundesamt, 2011). For example, water-based activities such as swimming, fishing, and boating are susceptible to water quantity issues.	Water and winter sports organisations or participating individuals, gardeners, equipment renters and sellers, and fishing and wildlife organisations.	

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BRIGAIID Market Analysis Framework+

Template for the Target group selection (Attractiveness scorecard)

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Target Group Selection (Attractiveness Scorecard)

Introduction and instructions

Once the market has been segmented, it is important to clearly define what the target group for the innovation will be. A target group is simply a market segment at which the organization will direct its marketing and communication efforts.

The main objective of carefully selecting a target group is twofold: 1) to ensure that the market segment being addressed is the most appropriate one; and 2) to allow for the preparation of a more customized marketing and communication strategy.

According to Aaker and McLoughlin (2010) there are three main issues to be considered when selecting a target group. First, the capacity of the organization to create a product that is appealing to the individual target group. Second, reflecting whether this appeal could be sustained even after competitors react to your market actions. And last, estimating whether the return (i.e., benefit) is higher than the investment (i.e., cost) required to provide an appealing, customized product. These issues have been reformulated and included in the MAF+ as criteria in a scorecard that can be used to evaluate and compare the attractiveness of different market segments.

In this exercise innovators are asked to have a closer look at the stakeholder groups that were shortlisted in the previous exercise and evaluate them using the Group Attractiveness Scorecard presented below. Based on their previous experience and knowledge of current clients and their own position in the market, innovators are asked to rate the potential customer groups according to the predefined criteria in the scorecard. The ratings are then used to calculate a total attractiveness score. Using this score, innovators can make a more informed decision about the group(s) that they want to address their offer to.

Market Segment	Criteria	Comments	Rating*					Total Score
			1	2	3	4	5	
Segment 1: Forest Managers	[C1] The customer group has a pressing need and is willing to act upon it.					4		19
	[C2] Our offering can satisfy that need.					4		
	[C3] We can easily communicate/access the customer group.			2				
	[C4] There are no known competitors addressing this need.					4		
	[C5] The customer group is substantial and potentially profitable.						5	
*A rating of 1 denotes the statement is totally inaccurate, a rating of 5 denotes the statement is totally accurate.								

References:

Aaker, David A., and Damien McLoughlin. 2010. *Strategic Market Management: Global Perspectives*. John Wiley & Sons.



BRIGAD Market Analysis Framework+

Template for the Market size estimation

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Market Size Estimation

Introduction and instructions

Once a target group has been selected based on the results of the Attractiveness Scorecard (previous exercise), the next step is to estimate its potential size. This is done by estimating the number of potential clients within the geographical area of interest and translating that into monetary values.

The aim of this exercise is to approximate the potential value (in economic terms) of the market for your innovation. This will be important information to help you work out the profitability and viability of your business later on.

This is completed in three steps:

1. Estimating the number of clients in your target group (C)

This can be done in two ways, both of which will require you to research your potential market:

- If you are developing a very specialized innovation aimed at a narrow group of clients, a bottom-up method is recommended. A **bottom-up** estimate requires you to identify your customers in a

particular geographic region (e.g. a local region or a country that you know well) and then extrapolate from this to estimate the size of the worldwide market for your innovation.

- If your innovation is to be a mass-produced product or widely available service, a top-down method is recommended. A **top-down** estimate requires you to use appropriate EU or country economy-wide statistics and then scale that down to estimate a realistic target group size. Depending on the nature of your target group, the necessary information could be found in the following sources:

- 1) EU/National/Regional or statistics (For example [Eurostat](#), national statistics websites, [World Bank](#)) – to find out the size of a particular population
- 2) Industry association reports, private company information (such as annual reports) – to find out the size of the market for similar/related products/services
- 3) The Online Resource appendix that accompanies the MAF+ (see Annex)

2. Assuming a market penetration rate (R)

The market penetration rate is the proportion of the target market you identified in step one that might be expected to buy your product/service. The market penetration rate will be higher, e.g. if customer demand for your innovation is higher; and lower, e.g. if the existing competition is strong. Estimating the market penetration rate is a judgment call, but can be simplified by asking yourself a series of linked questions and then multiplying the answers together. The example below shows the case of a target group that is made up by a total of 100 individuals. As is shown, the market penetration rate can get small very quickly:

a)	How many individuals within the target group identified in step one will have a real and pressing need for your product?	30 out of 100 = 30%
b)	Of these, how many will you be able to get the attention of?	6 out of 30 = 20%
c)	Of these, how many will be convinced that your offering is the best option?	3 out of 6 = 50%
d)	Of these, how many sales deals will you realistically be able to close?	2 out of 3 = 66%
Overall penetration rate		2 out of 100 = 2%

Multiplying the numbers from step one and two will give you the total number of clients you can obtain in the target market.

3. Determine the price that you will charge your clients (P)

The price you will charge your clients can be determined in a number of ways. Two simple options are:

- i) Cost plus pricing: If you are entering a new market, one way of setting a price is working out your costs then adding a set amount or margin.
- ii) Competitive pricing: Copy the pricing strategies of your competitors

Bringing it all together

Once you have set the price for your innovation, you are ready to estimate the economic value of your target market by simply multiplying the output of the three steps described previously:

$$\text{Market Value} = C \times R \times P$$

Additional notes

It should be highlighted that the main purpose of this exercise is to gain a better understanding of the factors that could influence the potential size of the target market, and apply that knowledge to inform your business strategy. Since the outcome of this exercise relies strongly on assumptions made along each of the three steps, it is strongly recommended to conduct an adequate level of research on your target market, run a sensitivity analysis by varying the assumptions made in each of the steps and estimate for best- and worst-case scenarios.

Exercise Templates (with examples in blue font)

MAIN TARGET GROUP: Environmental research institutes							
Location	Year	Number of Customers (C)	Market Penetration Rate (R)	Market Size (C x R)	Price (P)	Market Value (C x R x P)	Comments/ Assumptions
Berlin	2017	4	50%	2	€ 1,000.00	€ 2,000.0	<p>We have strong and long-standing relationships with two of the research institutes in the city.</p> <p>We are aware of their need for a tool like ours and we think their willingness to adopt it would be medium to high.</p>
			%			€	
			%			€	

KEY GROWTH OPPORTUNITY: Environmental research institutes							
Location	Year	Number of Customers (C)	Market Penetration Rate (R)	Market Size (C x R)	Price (P)	Market Value (C x R x P)	Comments/ Assumptions
Germany	2017	15	20%	3	€ 1,000.00	€ 3,000.0	<p>We have identified 15 other potential clients across the country. Even though our network is not as strong outside Berlin, having closed</p>

							deals with the first two clients in the city should provide good references for us to convince a number of players to take up our innovation.
			%			€	
			%			€	

Annex: Online Resources

The following resources could be useful to complete the MAF+ exercises. Remember, online search engines are your friend! Along with these resources below, keyword rich searches should lead you to what you want to know.

Population projections

EUROSTAT provides projections of population growth by country and region, and also breaks this down by age and sex. The data can be viewed online or downloaded at

<http://ec.europa.eu/eurostat/web/population-demography-migration-projections/population-projections-/database>

Economic growth

Inflation

Inflation measures the change in prices in an economy. Stable and low inflation is considered an important indicator of an economy's health.

The headline EU inflation indicator is the Harmonised Index of Consumer Prices. This is shown visually for all of Europe here: <http://ec.europa.eu/eurostat/inflation-dashboard/> This tool also allows you to see price changes by item group (e.g. housing, food and beverages, technology etc.)

Detailed data by country can be found here: <http://ec.europa.eu/eurostat/web/hicp/data/database>

Exchange rates

The exchange rate, i.e. how much of a foreign currency one Euro can buy, can have a large impact on business viability, especially for heavily traded goods and services. It is also a key indicator of an economy's health.

Overall trends can be seen by checking the European Central Bank's daily nominal effective exchange rate, which is a weighted average exchange rate with 19 of Europe's major trading partners: <https://www.ecb.europa.eu/stats/exchange/effective/html/index.en.html>

The ECB also provides long term data on specific exchange rates:

<https://www.ecb.europa.eu/stats/exchange/eurofxref/html/index.en.html>

European economic growth (and projections)

Data on past and projected medium term economic growth for European countries can be found here: http://ec.europa.eu/economy_finance/eu/countries/index_en.htm

International economic data

The World Bank has an excellent data platform that covers a wide range of economic and social variables, by country. For example, GDP levels, GDP per capita, GDP growth

(<http://data.worldbank.org/indicator/NY.GDP.MKTP.CD>); unemployment

(<http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS>); inflation

(<http://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>); exports

(<http://data.worldbank.org/indicator/TX.VAL.TECH.CD>), and many more.

Public perceptions

Public perception data on a massive variety of topics is collected by the EU in the form of the Eurobarometer every year. Approximately 1000 people in each EU country are interviewed and the data is collected and made available at the following interactive website:

<http://ec.europa.eu/COMMFrontOffice/publicopinion/index.cfm/General/index>

Environmental issues

General European and country overviews

The EEA's annual State of the Environment reports present detailed information by topic and country on all sorts of environmental issues and industries affected and dependent on the environment. It can be found here: <http://www.eea.europa.eu/soer>

Climate change impacts

The most recent Intergovernmental Panel on Climate Change (IPCC) report is the key reference for climate change impacts and vulnerabilities. The Europe chapter is likely to be of particular reference: http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap23_FINAL.pdf as is

the higher-level Summary for Policymakers: http://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-Chap23_FINAL.pdf

Climate change commitments

The Climate Tracker website independently tracks and evaluates climate commitments. It has up to date policy information, by country. <http://climateactiontracker.org/countries.html>

Local, regional, national and European adaptation policy

The Climate ADAPT website has information on adaptation policies at all levels of European governance. This is organized by sector (<http://climate-adapt.eea.europa.eu/eu-adaptation-policy/sector-policies>) and by country and region (<http://climate-adapt.eea.europa.eu/countries-regions>).

Hazard information

The BRIGAID Market Scoping Report, Deliverable 6.1, ranks the attractiveness of different regions of Europe in terms of the expected impact of climate change on them and their adaptive capacity (the knowledge, ability and willingness to respond to that risk). This is based on the assumption that the regions that will be most attractive to BRIGAID innovators will be those that face the largest impacts from climate change and have the highest ability/willingness to respond to these impacts. This information is presented as colour coded maps for each hazard studied in BRIGAID. For example, for innovations responding to river floods, the most attractive regions will face the greatest risk of river flooding, have people or valuable assets that will suffer if flooding occurs, and have a high adaptive capacity. The report can be downloaded from the BRIGAID website here: http://brigaid.eu/wp-content/uploads/2016/10/BRIGAID_D6.1-Market-scoping-report.pdf

Fires

The European Forest Fire Information System contains historical and current data on fires, as well as forecasts. This data can be displayed by country, region, or sub-region (NUTS 3), as well as reports summarizing overall fire risks and policy responses. See: <http://forest.jrc.ec.europa.eu/effis/applications/>

This information is also summarized by the EEA here: <http://www.eea.europa.eu/data-and-maps/indicators/forest-fire-danger-1/assessment>

Flooding and sea level rise

The European Environmental Agency has a number of useful resources related to flooding data, risk, forecasts, and policy. This recent publication summarises current information.

<http://www.eea.europa.eu/publications/flood-risks-and-environmental-vulnerability> Additional data and information can be gathered by searching “flooding” in the EEA data and maps search engine <http://www.eea.europa.eu/data-and-maps>

Visual maps of sea rise and flooding risk under climate change can be seen here:

<http://sealevel.climatecentral.org/maps>

Extreme rainfall

Along with the IPCC reference given under Climate Change Impacts above, the EEA also offers extensive and more localised data on extreme rainfall events: <http://www.eea.europa.eu/data-and-maps/indicators/precipitation-extremes-in-europe-2/assessment>

Drought and water scarcity

Additional information on droughts in Europe (including up to date data) can be found at the European Drought Observatory website:

<http://edo.jrc.ec.europa.eu/edov2/php/index.php?id=1000>

BRIGAIID Market Analysis Framework+

Template for the Market growth rate estimation

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Market Growth Rate Estimation

Introduction and instructions

After having estimated the size of your target market in the previous exercise, the next step is to try and get an idea of whether the market can be expected to grow, remain stable, or shrink in the future.

This task is not only a good chance to think about future opportunities and challenges in your market, the outcomes will also be useful to elaborate time series, make observations, and identify trends. The figures can also be used to conduct a comparative analysis against other market segments of interest, other industries, or growth rates of economy-wide indicators like GDP. These comparative analytics can identify possible points of inflexion that, in turn, can hint the likely arrival of threats or opportunities for your business (Aaker and McLoughlin 2010).

You can calculate the market growth rate in three steps:

1. Calculate the market value in the reference year (MV_0) – for instance, this can be what you calculated in the previous exercise (market size estimation)

2. Calculate the market value in the year of interest (MV_1) – i.e. a snapshot of the market one year later, five years later, etc.⁴

3. Calculate the market growth rate (%G) using the following formula:

$$\%G = (MV_1 / MV_0)^{(1/\# \text{ of years})} - 1$$

Calculating this figure can be done in the same way as you calculated the original market value (MV_0) in the previous exercise. The same resources, such as Eurostat and company accounts, will again be of use. Remember, the aim of this task is not to calculate a perfectly accurate growth rate, but rather to consider the future of your market and the opportunities and challenges that may arise.

⁴ The decision of what the year of interest should be is commonly made based on data availability or strategic interests of the organisation. Calculating the market size in past years is commonly easier as data is more readily available. Such historic data can be used to identify trends and associate them with changes in past political or economic conditions, among others. Making projections into the future might be more difficult due to the need of assumptions, but of high strategic value.

Exercise Template (with examples in blue font)

Market Value in Reference Year (MV ₀)	Market Value in the Year of Interest (MV ₁)	Market Growth Rate (%G) = (MV ₁ / MV ₀)^(1/# of years) - 1	Comments/ Assumptions
€ 2,000.00	€ 5,000.00	$(5000/2000)^{(1/1)} - 1 = 1.5 = 150\%$	MV ₀ = 2015 , MV ₁ = 2016
€ 950.00	€ 2,000.00	$(2,000/950)^{(1/4)} - 1 = 0.2045 = 20.45\%$	MV ₀ = 2011 , MV ₁ = 2015
€	€	%	



BRIGAD Market Analysis Framework+

Template for the Cost-Volume-Profit analysis

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Cost-Volume-Profit (CVP) analysis

Introduction and instructions

It is important to **estimate the profitability of a product** through a cost-volume-profit (CVP) analysis. The reality is that to have a sustainable future, your business will have to cover its costs. This tool will allow you to calculate the different costs that your business will face at different levels of output, and subsequently estimate the number of units you will have to sell to break even – and the profits you will earn if you go beyond this point. It will also provide you with a succinct overview of your costs and income.

To complete the CVP, you need to estimate the costs you will face under different cost categories, and then relate these to the price and unit sales you expect to achieve. This is then used to calculate the contribution margin per unit sold (i.e. the difference between the variable costs of producing an additional unit relative to the price you receive; this contribution is what covers fixed costs and ultimately profit), the break-even point (in units and monetary values), and the gap until you reach break-even (in units and monetary values). This is also showed visually on a chart. The required inputs to use the tool are:

1. A breakdown of all the costs (fixed and variable) related to the product or service along the value chain (development costs, sales and marketing costs, etc.)
2. The unit price (based on the pricing model used, e.g. subscription fee, equipment unit, installation)
3. The projected unit sales (number of units expected to be sold)
4. The target income in net figures (the revenue goal set for the product or service)

Exercise Template (with examples in blue font)

	Fixed ⁵	Variable ⁶
Product Development Expenses		
Direct labour	5,000.00 €	5.00 €
Equipment (Computers, etc.)	5,000.00 €	5.00 €
Software and Development Tools	3,000.00 €	3.00 €
Other Development Expenses	1,000.00 €	1.00 €
Sales and Marketing Expenses		
Sales Salaries & Commissions	5,000.00 €	5.00 €
Advertising	500.00 €	5.00 €
Web Site Development and Maintenance	100.00 €	1.00 €
Other Sales and Marketing Expenses	100.00 €	
General Expenses		
Overheads (office space rental, supplies, etc.)	20,000.00 €	20.00 €
Other General Expenses	5,000.00 €	
	44,700.00 €	45.00 €
Price per unit (subscription fee, equipment unit, installation, etc.)	50.00 €	
Projected sales (units)	10000	
Projected Net Income	500,000.00 €	
Target Net Income	1,000,000.00 €	

⁵ Fixed costs are those that costs that are constant whatever the amount of output you produce. Fixed costs should be calculated as annual figures.

⁶ Variable costs are those that increase as you produce additional units. Variable costs should be presented as the additional cost of producing one more unit of output.

Contribution margin per unit	5.00 €
Contribution margin ratio	0.10
Break-even point (units)	8940
Units to achieve Target Net Income	208,940
Break-even point (Euros)	447,000.00 €
Euros to achieve Target Net Income	10,447,000.00 €

BRIGAD Market Analysis Framework+

Template for the Porter's five forces

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Porter's Five Forces

Introduction and instructions

After gaining good insight of your target market, the next step is to widen your scope of vision to consider other actors who could influence the performance of your business: competitors, buyers, and suppliers. The Porter's Five Forces framework is a useful tool to identify all the players who are involved in your specific business situation and who could change the balance of power. Understanding the level of competition and your relative power against others allows you to further assess the attractiveness of a market, identify trends within a specific business situation, and anticipate threats and opportunities. All this can provide rich insight into how to deal with all these issues strategically.

According to Michael Porter "the state of competition in an industry depends on five basic competitive forces" (Porter, 1980). The higher the competition and lower your power, the less attractive (and less profitable) a market will be. The five forces identified by Porter are:

- **Existing competitive rivalry:** intense competition between rivals that are already in the market (or got there before you) drives down prices and profits, reducing the attractiveness of the market. Existing competitors have the advantage of knowing the market dynamics and

will commonly be ready to devise and implement new strategies that keep them from losing market share.

- **Threat of new entrants:** if new competitors can easily enter the market there is a substantial threat of instability and uncertainty in the business situation, which can ultimately keep prices and profits down. It is easy to enter a market e.g. when specialized knowledge, expertise, and/or costly equipment are not necessary for a competitor to deliver solutions of comparable quality and price.
- **Threat of substitute products or services:** if a customer can easily replace your product or service with an alternative that delivers comparable quality and price, your competitiveness will be under threat.
- **Bargaining power of buyers:** if your business depends on selling to only a few clients, and if they are aware of this, they will be in a good position to bargain prices down - together with your profits. This is especially true for large clients who can easily buy from someone else or even develop alternative solutions themselves.
- **Bargaining power of suppliers:** if your business or innovation relies heavily on inputs that are provided by external suppliers, a raise in their prices could affect your performance drastically. In some cases an interruption in the supply of such inputs could also render you incapable of delivering your product/service to your own clients. Such high stakes give your supplier a good position to bargain prices up. This is especially true if you depend on large suppliers of essential inputs that have few or no substitutes.

A graphic representation of each of these forces and examples of the elements making them up are given in the figure below.



Exercise Template (with examples in blue font)

Force	Sample Drivers	Your assessment
Existing Competitive Rivalry	<ul style="list-style-type: none"> • Number and size of firms • Industry size and trends • Costs of leaving the market • Product/service ranges • Differentiation strategy 	<p>The number of firms in Europe whose core business is to provide technological solutions against flooding is large (>100). A considerable majority (>90%) of these firms are SMEs active mainly within their national market, and many are young spinoffs from universities and research institutes. The two largest players are located in the Netherlands (Company X – www.companyx.nl) and Austria (Company Y – www.companyy.at).</p> <p>Influenced by the higher recurrence and damage of flood events in Europe in the last two decades, the market for flood prevention solutions has grown steadily in the same period. The new trend is moving towards green infrastructure and nature-based solutions.</p> <p>The products offered by the identified firms entail mainly infrastructure solutions (fixed and temporary) and software solutions (forecasting and modeling). In both cases, the unavoidable need for costly equipment (e.g. construction and computational equipment) to deliver their products makes it expensive for existing players to leave the market.</p>
Threat of New Entrants	<ul style="list-style-type: none"> • Size of barriers to entry • Economies of scale • Capital investment required • Special competences required • Technology/Intellectual Property protection 	<p>Delivering products and services in this industry requires strong investments in equipment as well as specialized knowledge and competences in hydrological sciences and civil engineering. These represent large barriers to entry.</p> <p>The strong competition makes it imperative to apply for patents, which can also represent a sizable barrier to entry.</p>
Threat of Substitutes	<ul style="list-style-type: none"> • Price/quality of alternatives • Changes in distribution channels • Costs of switching • Fashion and trends • Legislative effects 	<p>The usual paying customers in this market are government authorities at all levels (national/regional/local). While local administrations generally tend to work with local suppliers, national authorities commonly have access to a wider range of alternatives, both from within and beyond the country.</p> <p>Currently, the choice remains mainly between infrastructure and software solutions. Trends point to temporary/deployable barriers, and fixed green infrastructure solutions instead of fixed grey infrastructure. This trend is expected to continue</p>

		given the EU legislation and policy efforts on nature-based solutions and green infrastructure, as well as open environmental data.
Bargaining Power of Buyers	<ul style="list-style-type: none"> • Number of buyers • Proportion of sales per buyer • Costs of switching products • Price sensitivity • Order size and frequency 	Currently our sole client is the City of X. Our contract includes the construction of a river flood barrier in the city center and maintenance services for a period of 20 years. Given a shortage of funding and an upcoming change in administration in the city, an amendment of the maintenance service contract is highly probable. This could harm the mid-term sustainability of our business as this is currently the only income for our company.
Bargaining Power of Suppliers	<ul style="list-style-type: none"> • Number and size of suppliers • Geographical coverage • Uniqueness of service • Relationships with customers • Costs of switching supplier 	We have at least two different suppliers for each of the key material inputs necessary to construct our flood barrier. For the maintenance services, we subcontract another company with which we have a special arrangement. A change in that arrangement would mean we can no longer provide the maintenance service.

References:

Porter, Michael. 1980. *Competitive Strategy. Techniques for Analyzing Industries and Competitors*. New York: The Free Press.



BRIGAD Market Analysis Framework+

Template for the Heat Map

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Heat Map

Introduction and instructions

The next step is to identify the specific characteristics of your organisation and of your innovation that provide value to your customers, and to evaluate them against those of your competitors. This analysis of competitive strength results in invaluable strategic information that can help you identify gaps in the market, exploit the weaknesses of your competitors, and gather information to convince potential clients that your offer is better than the others.

This heat map visually shows your strengths and relative weaknesses against the competition. It is completed in four steps:

1. **Identify your competitors:** fill in the top row of the table below with the names of your competitors and the second row with the names of their products/services. This list should include directly competing firms and/or products, indirect competitors (firms and/or products that offer clients a different way to achieve the same outcome), and potential substitutes. Researching online or through industry associations can help you identify competitors that were previously not on your radar. You can also get more in-depth information by directly asking your potential clients what solutions they are currently using and what features they find most useful. Consider that both the firms and their products/services will be evaluated in this exercise.

2. **Select the assets/competencies or features to assess:** assets and competences are your competitor's resources (e.g. facilities, equipment, customer base, brand name) and skills (e.g. scientific excellence, expertise, marketing skills) that enable them to deliver a quality product/service to the target group. Features are the specific characteristics of the product/service that clients value (e.g. effectiveness, ease of use, attractive design, price). Some of these assets, competences and features might be more relevant than others (e.g. it is great if a flood barrier is cheap, but if it is not effective in keeping the water out then the client will not buy it). Separate these into two groups, those which are a "key for success" and those which are of "secondary importance" and fill in the second column from the left in the table below.
3. **Evaluate your competitors:** judge each of the identified firms according to their assets/competences. Do the same for each of the products according to their features. Use a 3 point scale where 1=below average, 2=average, 3=above average.
4. **Evaluate yourself and your innovation:** now dispassionately assess your own organisation and your product according to each of the assets/competences/features considered; use the highlighted column on the right end of the table.

The resulting table shows the strengths and weaknesses of your innovation relative to those of your competitors.

Exercise Template

Heat Map:		Competitor 1	Competitor 2	Competitor n	Your organisation
		Product 1	Product 2	Product n	Your product
Key for success	Asset/Competence/Feature 1				
	Asset/Competence/Feature 2				
	Asset/Competence/Feature 3				
Secondary Importance	Asset/Competence/Feature 4				
	Asset/Competence/Feature 5				
	Asset/Competence/Feature 6				

Key (3 point scale):

	3 = Above Average
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	2 = Average
	1 = Below Average

Exercise Template (with examples in blue font)

Heat Map:		Company X	Company Y	Company Z	My Company
<i>Solutions to contain forest fires</i>		Product X	Product Y	Product Z	My Product
Key for success	Feature: Effectiveness in putting out forest fires				
	Feature: Mobility/ease of deployment				
	Asset: Closeness to the current government				
Secondary Importance	Feature: Price				
	Competence: Knowledge/experience on previous cases of fire				
	Competence: Maintenance skills				

Key (3 point scale):

	3 = Above Average
	2 = Average
	1 = Below Average



BRIGAD Market Analysis Framework+

Template for the Value proposition

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

Value proposition

Introduction and instructions

A value proposition succinctly and clearly summarises the real benefits that your customer will enjoy when they purchase your good/service. It clearly aligns what you offer with what your customer wants. A good value proposition clarifies the unique, measurable value that you offer and how this will improve your customer's life.

A value proposition is valuable for strategy and for marketing. As a clear statement of why a customer should purchase your product/service, the value proposition is the natural starting point for all marketing. The value proposition also provides strategic focus: it focuses on the customer's experience and highlights the uniquely valuable and valued aspects you offer, which should be the focus of all strategic business decisions.

A valuable proposition is the intersect of the offering of your business and the wants and desires of your customer. Accordingly, putting together your value proposition is completed in two steps:

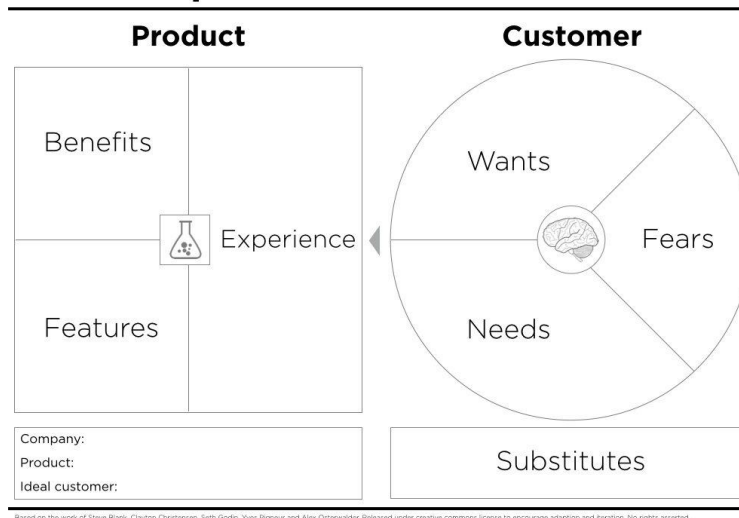
1) Define your product/service

- a. **Features:** How does your product work? *List the useful features and attributes of your product/service*
- b. **Benefits:** What does your product/service do to make your customer's life better? *List the ways your product/service alleviates customer pain or increases customer pleasure*
- c. **Experience:** What does it feel like to use your product/service? *Consider the emotional experience of using your product/service*

2) Understand your customer

- a) **Wants:** What are the *emotional* drivers of your customer's choices? *What do they want to be, do or have?*
- b) **Needs:** What are *rational* drivers of customer choices?
- c) **Fears:** What are the risks or potential downsides of switching to your product? *What might stop a potential customer?*
- d) **Substitutes:** What does your customer do instead of using your product/service today?

Value Proposition Canvas



Once you have considered each of these aspects, you will have all of the information to pull together a clear, compelling, and accurate value proposition – which you can then use to guide strategic planning and marketing messaging.



BRIGAIID Market Analysis Framework+

Template for the SWOT Analysis

Elaborated by:

Gerardo Anzaldúa and Hugh McDonald (Ecologic Institute)

SWOT (Strengths, Weaknesses, Opportunities, Threats) Analysis

Introduction and instructions

The SWOT Analysis is a widely used tool that helps to gather and portray information on internal and external factors that (may) influence a firm's performance (Pickton & Wright, 1998). When carried out as a thorough process of reflection, it can be instrumental to “discover and diagnose the core competences and core problems of an organisation” (Coman & Ronen, 2009). Further, it prepares them for the external opportunities and threats posed by competitors and other driving forces (such as those identified in the PESTEL Analysis and Porter's 5 Forces exercises).

In BRIGAIID, the SWOT Analysis follows the approach by Coman & Ronen (2009), which starts by reflecting upon a small number of events that had a significant impact on the organisation in the past (e.g. the closing of a big contract, the development of a new product). These events are then analysed carefully to reveal the specific internal and external factors that drove the achieved outcomes.

The idea behind this exercise is to use the results of the PESTEL Analysis, Porter's 5 Forces and Heat Map to define a list of priority actions to increase your competitiveness. For instance, the six conditions studied in the PESTEL Analysis are all potential drivers of opportunities and threats (e.g., changes in regulation, demographics, lifestyle, technology); and the assets, competences and features you identified in the Heat Map exercise can be translated to relative strengths and weaknesses towards your competitors.

The figure below shows a SWOT matrix template. As a first step, decide on one or two events that have had a significant impact on your business. Briefly describe these in the top text box and use these to frame your SWOT analysis. In each quadrant of the SWOT a list of guiding questions is shown to help you identify the strengths, weaknesses, opportunities, and threats relevant for your case. With these questions as a guide, fill out Strengths, Weaknesses, Opportunities, and Threats in the template. Make sure all entries are formulated in a concise, action-orientated way and, to the extent possible, based on facts rather than opinions. Stick to one entry per line, and aim for three to five entries per quadrant (the longer the list, the higher the probability of including entries that do not have a substantial impact on your organisation).

A well-structured group brainstorming exercise should result in a thorough list. Be realistic and dispassionate in your analysis. When planning, it is better to consider the worst case scenario than the best, as this will give you a better chance to prepare. Also, to ensure that you are identifying the root cause of the underlying strength, weakness, opportunity or threat, it may be helpful to apply the "5 Whys" technique. Each initial identified strength, weakness, opportunity or threat should be repeatedly interrogated by asking - "why?" - to get to the essence of the issue. For example: 1: Our tool is popular with users – why? - 2. Our tool is simple to use – why? - 3. Our tool doesn't require specialist knowledge and is simple to master – why? - 3. Our tool has an intuitive user interface that our customers enjoy using – why? – 4. We are excellent at designing intuitive tools that meet customer abilities and needs – a fifth "why" is not necessary, as you have identified your core strength with the fourth why.

Exercise Template

Fill out the blank template in sheet "1 SWOT" of the attached excel file ("MAF+ - SWOT and Priority Score")

Significant event(s)	
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STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ▶What does your organisation do better than others? ▶What are your unique selling points? ▶What is your organisation's competitive edge? ▶What do competitors and customers in your market perceive as your added value? 	<ul style="list-style-type: none"> ▶What do other organisations do better than you? ▶What elements of your business add little or no value? ▶What do competitors and customers in your market perceive as your shortcomings?
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ▶What political, economic, social, technological, environmental, or legal changes are happening that could be favourable to you? ▶Where are there currently gaps in the market or unfulfilled demand? ▶What new innovation could your organisation bring to the market? ▶What social and environmental impacts could your product have? 	<ul style="list-style-type: none"> ▶What political, economic, social, technological, environmental, or legal changes are happening that could be unfavourable to you? ▶What restraints do you face? ▶What is your competition doing that could negatively impact you?



BRIGAD Market Analysis Framework+

Template for the SWOT priority score

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SWOT – Priority Score

Introduction and instructions

After identifying the Strengths, Weaknesses, Opportunities, and Threats facing you and your business, the next step is to decide which factors you should focus on. This exercise will identify which factors are most strategically important. To help clarify the analysis, consider the internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats) separately.

Complete this exercise with the aid of the second excel worksheet, “*Priority Score*”. The Strengths, Weaknesses, Opportunities, and Threats that you entered in the previous SWOT exercise should have been automatically copied across to this sheet. Once you complete the steps below, the sheet will automatically calculate a priority score for internal factors (Strengths and Weaknesses) and for external factors (Opportunities and Threats).

Internal factors: Strengths and weaknesses

You have the ability to address strengths and weaknesses of your offer relative to your competitors. The key to prioritising which factors to focus on is to consider two aspects: (1) How crucial is this strength to your success (or how likely is it that this weakness will lead to your failure)?; and (2) for each factor, how do you compare to your competition? You need to ensure that you protect and promote your key strengths, and quickly address any important weaknesses. This exercise will help you prioritise what factors to focus on first.

1. Step one: Importance – the first step is, for each strength and weakness, to consider how crucial each factor is to your success (ask yourself, how important is this factor for me to deliver value to my customer?). Select a number between 1 and 5, where 1: unimportant; 2: low importance; 3: moderately important; 4: important; 5: absolutely crucial. Do this for every strength and weakness.
2. Step two: Relative strength/weakness – the next step is to compare yourself with your competition. For each strength (and weakness), grade yourself compared to your competition on a 1 -3 scale: 1: I am marginally stronger (weaker) than my competition; 2: I am moderately stronger (weaker) than my competition; 3: I am considerably stronger (weaker) than my competition.

At this point, a priority score for each strength and weakness will be calculated automatically. Those factors with the highest scores should be your focus: you should continue to protect and develop your most important strengths and you should work quickly to address the high priority weaknesses.

External factors: Opportunities and threats

You also should look beyond you and your competitors today to scan the horizon for potential threats or opportunities – and to prepare for them. To prioritise which opportunities and threats you should focus on, you should consider two aspects: (1) What is the probability that this opportunity/threat will occur?; and (2) how big an impact would this factor have on your success, if it did occur? This exercise will help focus your attention on the external factors that are most likely to have a large impact on your success.

3. Step three: Probability of impact – for each entry, consider the likelihood that this opportunity or threat will arise. Select a number between 1 and 5, where higher numbers imply a greater likelihood that the factor will occur (1: very unlikely to occur; 2: unlikely; 3: 50:50 chance; 4: likely to occur; 5: very likely to occur). Enter a value between 1 and 5 for each opportunity and threat you have identified.
4. Step four: Impact level – Next, use the drop down list in the “impact level” column to indicate how large an impact on your success the threat or opportunity would have, if it occurred. Select either 1: minor impact, 2: moderate impact, or 3: large impact. Enter a value between 1 and 3 for each opportunity and threat entry.

Once you have entered a probability of impact value and an impact value for all opportunities and threats, a weighted priority score will be calculated. As with the internal factors, the external factors with the highest priority score should be your focus. By focussing on these as you develop your strategy, you give yourself the best chance to take advantage of valuable opportunities and to deal with dangerous threats in the future,

See sheet "2 Priority Score" in attached excel file ("MAF+ - SWOT and Priority Score")