2. Business development: a step-by-step approach

Developing a product and introducing it successfully to a bottom of the pyramid (BOP) market are not easy tasks. Apart from the normal challenges of running a business, you have to gain an understanding of a different (business) culture, and of customers with different needs and means. It takes time, perseverance and creativity, but the rewards can make it worth your while. Several Dutch entrepreneurs have already shown the way. Their experiences provided the input for the business development process presented here.

Outlined below is a step-by-step approach that will guide you and help you to prepare, try out and introduce your product onto the market. It is designed primarily for water and sanitation products, but most of it should apply to other BOP products and services as well.

Steps				
Product 	- product definition - product affordability	- product development - lab testing, compliance and certification - value proposition	- technical pilot - commercial pilot - diversifying product applications	- continuous improvements
Market 	- target market - target group - competitive landscape	- market research - pra techniques	- social marketing	- market introduction - market feedback
Business 	- entrepreneurship - business model - basic financial analyis - financial model	- start-up team - organization - distribution - network building - realization schedule	- setting up your local organization	- business systems - financial management and control
Finance 	- credit need and cash flow - blend of financial instruments	- cash flow - seed money and venture capital	- finding local financial partners	- near equity - loans
Key deliverables 	- blueprint of product, market and business	- business plan	- pilot project(s) in progress - adjusted business plan	- a profitable enterprise with potential to grow

Every step provides information about four major elements: product, market, business and finance. In each step the focus is different. Throughout the process, case studies, insights from the field, info sheets, questions to ask yourself and practical tools will help you to develop the necessary skills and insights to develop your business.

Questions 	questions you might ask yourself when you are developing your business
Tips 	practical tips, often derived from lessons learned by the entrepreneurs involved
Info sheet 	straightforward information on a certain topic
Tools 	practical tools e.g. for calculating your financial forecasts
Attachments 	booklets, articles, and presentations containing useful background information

At the end of this chapter you will have a good impression of what it takes to write a solid business plan, find the partners you need to work with, attract funds to invest in the necessary resources, test your product in the market and finally set up your business to launch the product and scale it up.

Step I: Getting Started

The start of your business! You have an idea about a product or service for which you feel there is a market. The first thing you will have to do is to assess whether the basics of your idea will hold. Briefly sketch the product, outline the potential market, define the business concept and estimate the initial funding. The end product of Step I will be a "blueprint" of your product, market and business.

This Step I consists of five elements: Product, Market, Business, Finance, and Key Deliverables. We will discuss them all in sequence.

In this section on Product, we provide an overview of the key issues related to developing your product. Spend time to calculate the total cost of ownership of your product and be sure your product is affordable to your future clients.

Steps	
Product 	- product definition - product affordability
Market 	- target market - target group - competitive landscape
Business 	- entrepreneurship - business model - basic financial analysis - financial model
Finance 	- credit need and cash flow - blend of financial instruments
Key deliverables 	- blueprint of product, market and business

Product definition

Define what you are going to sell. Will it be a service or a product, and will it be for use by individual households or communities (e.g. operating in a village)? Define your product using the following questions:

- Will it be a product, a service, or a combination of a product and a service?
- Is it a stand-alone product or does it depend on other companies' products?
- Will it be a household or a community-based solution?
- What will your product do (e.g. treat water, deliver water, store water or improve sanitation)?
- What kind of inputs can it handle (water with different types and levels of contamination, urine, feces, household sewerage)?
- What kind of outputs does it deliver (water for consumption, other quality water, fertilizer, etc.)?

Product affordability

Successful products serve customer needs to perfection: they deliver the right value for the right price to the right customer group. A key aspect you have to consider in this first step is the product affordability: "Is the intended customer able and willing to pay for this product?"

Of course, a customer need not be an individual or family; it could also be a community, an NGO or a government entity. To assess affordability, you will have to try to calculate the total cost of ownership (TCO) as best as you can. Take into account the following costs a customer might incur while purchasing your product:

- Investment in the initial purchase: the initial purchase often exceeds the amount the customers in BOP markets have readily available, so it is not uncommon for them to use a finance structure (like a loan) to finance for the initial purchase of the product. However, these finance structures often lead to additional costs.
- Consumables: water products make use of consumables (like a filter piece). The price of the consumables determines to a large extent the TCO of a product.
- Maintenance costs: maintenance costs are often not known at the beginning of a product development cycle, but you will need to take something into account.
- Disposal cost: in some cases, disposing of consumables or the main product at the end of its useful life may incur a cost.

When the TCO of a product has been calculated it can be compared with the competitor's information. An example is given in the schedule below, where we have calculated the TCO of a mainstream water purification product.

Calculating the total cost of ownership

Consider a water filter that costs €15 to purchase and works with filter cartridges that cost €1 and can treat 3,500 liters per piece. What is the TCO of this system?

Costs per year:

Price of the unit when purchased: €15, depreciates in 10 years		1.5 €/year
Maintenance (replacement of seal, pump rubber, etc.) estimated at		0.5 €/year
Use of filters: 7,000 liters requires 2 filters at €1 per filter		2.0 €/year
	Total	4.0 €/year

For 7,000 liters of water per year, costs are €4.0 per year, or €0.57 per 1,000 liters.

This example does not take into account potential costs to the customer of obtaining €15 to make the initial purchase. There might be costs if a loan needs to be obtained from a bank or moneylender.

Exhibit 2: Calculating the total cost of ownership – an example (BiD Consult)

Market

In this section on Market, we provide you an overview of the key issues on marketing your product. Choose your customer segment carefully and compare your product with competing products in the market.

Target market: geographical segment

Once you have determined what your product can technically do, define what this means in practice. People are not aware of contamination, but they are aware of the different water sources they have at their disposal: open wells, closed wells, deep bore wells, surface water (lake or river), rainwater, tap water, etc. From your technical understanding, you need to

define the kind of water sources your product is suitable for, and then you need to find out whether this fits the target market. In India, data on what type of water sources people use in which states is available from the Census of India 2001, which is attached to this Toolkit. Other information is also available, so please consult a local Chamber of Commerce and local government office. Be creative in looking for your information; a simple Internet search on relevant key words is the minimum, but you can also try friends, libraries, and many other sources. When you have collected data, analyze your information to define your potential market in geographical terms.

Further reading:
Attachment 1: Census India

Analyzing the potential market

When Water4life, a DSM initiative in India, was exploring the local Indian market in Tamil Nadu, the Water4life team approached a local NGO to discuss the local needs and the local market potential. Consulting the data in Census of India 2001, Water4life concluded that in Tamil Nadu, a state with 5.9 million households, 35% of the households still used a source other than tap water. Also, in rural areas 75% of the households did not have a source of drinking water on their own premises. Local experience from the NGO found that even if households used a local tap for drinking water (often supplied by tankers) the supply of water was unreliable, especially during difficult seasonal periods. This meant that for the Water4life product, targeted at households that use a non-tapped water source, Tamil Nadu presents about 2 million customers, and possibly more if a campaign was conducted to promote the use of the filter in situations where tap water supplied from tankers was used. Further investigation with the local NGO identified local communities within the state that matched the profile. This first top-down approach was enough to show that the market in Tamil Nadu for the Water4life product by itself was already sufficiently large, and that, initially, no other states needed to be targeted to launch the project with a sufficient market potential.

Target group: customer segment

Besides the geographical scope of your market, you should also define the target market in terms of target customer segment (target group), based on e.g. income level of the target customers. Information for this can be obtained from local government, the local Chamber of Commerce, the Dutch business support office, local consultants and other sources similar to the list outlined above for the geographical market. Beware of the following major risks:

- Choosing the wrong customer segment will most likely doom your business idea (but you did not need this toolkit to tell you that!). To be realistic you must select a customer focus group that can afford the product and are most likely to buy it (we will study this in detail later).
- Not making a clear choice will lead to serving different markets at the same time with the same product, spending more on your marketing and increasing distribution costs, probably without realizing sufficient revenues. This might mean a considerable waste of resources. Although there is plenty of opportunity later in the project to make adjustments, it helps a lot if you focus on a clear target customer group from the start. So try to limit yourself, define the group as well as possible, and design the product to meet the needs of that group the best you can.

This choice is not necessarily final. Make an initial choice and change it later on as information comes in on actual market acceptance and other issues.

Competitive landscape of water technologies

Get an indication of the competitiveness of a technology in India by comparing the TCOs of different products. Even a product with a high purchase price can be successful. There is more to the total product offering than the initial price.

Product	TCO components purchase	maintenance	consumables	TCO euros/m3	depreciation period years
Slow sand filtration (household)	30	0.25	0.25	0.36	15
Gravitational ceramic candle filters	7	0.5	2	0.46	10
Purator (Basic Water Needs Foundation)	4	0.5	2	0.47	5
Purit	15	0.5	5	1.00	10
Aqua Guard	100	5	0.5	1.74	15
PUR	0	0	70	10.00	0

Exhibit 3: Comparing the total cost of ownership of different water purification technologies (BiD Consult)

The information for this table was collected from public sources. It is meant to be illustrative of the field of water purification products. Market prices can change and there might be a difference in pricing over regions, markets or market channels.

We have attached three small booklets to this Toolkit that illustrate appropriate techniques and some of the products mentioned above.

er reading:
Attachment 2: Smart Water Solutions
Attachment 3: Smart Sanitation Solutions
Attachment 4: Smart Water Harvesting Solutions

Business

In this section on Business, we provide an overview of the key issues when you start up and build your organization. Make sure you spend adequate time on developing your business model and especially the way your business will create value (like profit).

Entrepreneurship

A successful business requires a combination of a good business idea and an entrepeneur (or group of entrepreneurs) who can bring the idea to a successful product. Do you have what it takes to be a successful entrepreneur? You do if you fit the following description: "Entrepreneurs are optimistic and future oriented; they believe that success is possible and are willing to risk their personal resources in the pursuit of profit. They are fast moving and flexible, willing to change quickly when they get new information. Entrepreneurs are persistent and determined to succeed, because their own money and ego are at risk" (www.moneybiz.co).

Do you feel you fit this profile? Are you ready to join them? If so, answer the following questions:

- What opportunities exist today for you to create or bring new products or services to the market that people want, need and are willing to pay for? What are your three best opportunities?

- How can you find new, better, and cheaper ways to sell your products or services or to reduce your operational costs?
- Are you willing to move out of your comfort zone, to take risks if necessary and to build your business?
- Are you clear about your personal motives for starting a business?
- Are you going to manage your company? Be honest with yourself about what you want. You could leave general or commercial management to someone else and focus on operations or development.

Further reading:
Info Sheet 2: Do I have what it takes?

One of the best ways to maximize your chances of success is to find and work with a mentor, someone with business experience who can guide and assist you. Most countries have systems to help entrepreneurs find an experienced mentor. Two organizations that can help you to find a coach in the Netherlands are:

- The Consularis Foundation (www.consularis.nl), which makes the knowledge and experience of entrepreneurs and entrepreneurial managers available to other entrepreneurs.
- Ondernem ersklankbord (www.ondernemersklankbord.nl), which consists of 225 former entrepreneurs, managers and specialists from trade and industry who give their time and effort, free of charge, to increase the success chances of small and medium-sized enterprises (up to 100 employees), especially those small entrepreneurs who cannot afford professional advice at commercial rates.

Business model

A business model describes the way a business creates value. Traditionally this is about the way your business will be able to create revenues. People are now realizing that creating financial value does not necessarily ensure business continuity in the long run. A company's social and environmental impact may affect future performance.

Traditional business models

Generally speaking, traditional business models focus on creating financial value (like turnover, margin, profit or cash flow). Good and solid financial results are highly important to ensure continuity and sustainable growth. If it does not make money, your business idea will not survive in an environment dominated by free markets and modern capitalism. Investors will only provide capital if they are convinced they will get their money back, plus a certain rate of return. And of course, making it big can be a powerful motive for entrepreneurs.

You have to think whether your business idea has the potential to create profit. At the end of this discussion of Step I we introduce a quick scan and a one page questionnaire for checking and summarize your business idea. A very simple financial model will help you to determine whether your idea is profitable as well.

Further reading:
http://en.wikipedia.org/wiki/Business_model

Social entrepreneurship

Social entrepreneurship is a business model that emphasizes social goals in the business model. This relatively new business model is described quite well in Muhammad Yunus' book, *Creating a World Without Poverty* (2007). In his view the ultimate goal of social enterprises is to eliminate poverty while making enough profit to secure financial sustainability. Unlike mainstream investors, the owners or investors investing in a social

business do not primarily have a commercial drive. They are happy with a modest return on their investment in money and time.
Further reading:
http://en.wikipedia.org/wiki/Social_enterprise
www.socialenterprise.org.uk

Cross-subsidizing

In short, cross-subsidizing is a business model in which a profitable activity subsidizes a non-profitable activity. Not all business activities are profitable from the start. A certain scale or market position is often needed to cover all related costs. On the other hand, the entrepreneur might decide to put social goals before financial ones. In this case an economically profitable activity subsidizes a business aiming to reach certain social goals.

Cross-subsidizing has an important downside risk: the subsidized activity is not profitable itself and depends on the performance of other activities. When not managed properly these activities can "eat up" healthy results and jeopardize a company's future. Also, a non-profitable activity runs the risk of having its financing cut off abruptly if the mood of the owner changes.

Further reading:
Info Sheet 3: Cross subsidization models

Basic financial analysis

When thinking about your business model you must be very clear about your intentions and your goals. Entrepreneurs or organizations launching water and sanitation products in low-income markets can have different motives: social or economical, or a combination of both. But even if the social goal dominates, the operation needs to become financially sustainable to secure the future of the business.

Without going into too much detail, define some basic choices about your business. In this phase it is just preliminary, so feel free to change things later on in the process. Use the following questions as a guideline:

- How do I deliver my product to the end users?
- What will your company do and what will it outsource to third parties?
- How will you make your profit?
- How will the final customer pay for the product?
- What is the role of NGOs in your business?
- Who will own the company?
- What is the geographical distribution of activities between your country and the target market? (Please refer to the section on Step II in this chapter, as this is an important issue.)

Financial model

A financial model is a calculation in a certain format regarding your cost price and forecasts on profit and loss, cash flow and the balance sheet. During Step I you start calculating your cost price and make some rough financial projections. During Step II your financial projections become important in persuading financiers to invest in your business. The key focus in Step III is financial control to ensure you meet your budgets while piloting your product. By Step IV all these financial activities should be in place and easy to execute in a professional way.

Info Sheet 3 describes two different ways to calculate your cost price: full cost price calculation, comprising all costs involved, and marginal cost price calculation, which calculates only the variable costs that arise when producing a single unit. To make profit your revenue must cover all the costs involved plus a certain margin. But from the cases we have seen, the question is whether all product development costs (made during Steps I, II and III) can be covered by the cost price while the product remains affordable to clients at the BOP. If your first calculations support this assumption, you should try to finance these development costs with subsidies, grants or in kind contributions from yourself and / or your partners. If you expect to earn back development costs you still have to try to attract subsidies and / or grants as these instruments provide financial means against attractive conditions.

Calculating a full cost price is the starting point, including an overhead percentage covering the indirect costs like marketing, communication and management. We advise you to calculate the development costs separately, including your in-kind contribution as an entrepreneur or innovator (all the hours you spend during Step I–IV, multiplied by a reasonable fee).

The way you calculate your cost price depends on the product itself and your decision on how to make it. To start with, it is difficult to calculate a cost price in a scenario in which you want to produce most parts of the product yourself, since it will be difficult to just loop up market prices for these parts. You will probably need a partner with experience in producing water and sanitation products to support you. Start to find out the cost price of different components and estimate the time needed to assemble the product. If parts of the product are not available yet, or need to be adapted or made from scratch, ask possible manufacturers to give you an indication of the cost price. Try to calculate two models:

- Source components, assemble them and export the end product to your sales market
- Export (often high-tech) key components to your sales market and source, assemble and distribute locally in the same market

Do not forget, if applicable, to include in your calculations:

- All kinds of import/export duties and taxes
- Custom handling and paperwork
- Transportation costs, intercontinental and local
- Breakage (e.g. 3% of the total cost price)
- Packagi ng
- R oyalties
- Installation locally, including instructions on use.

Now you must make an assumption about the overhead costs. This is a percentage (the value depends on your business model and your sales forecasts) calculated on the cost price you have already made. Our advice is to start small as a business and stay “lean and mean”, incurring the lowest possible indirect costs. The four entrepreneurs mentioned in this Toolkit all have a low overhead (5–15% of the total cost base).

You need your estimations on the cost price as an input to calculate the total cost of ownership (TCO) so you can compare your product with competitors. You can also make better assumptions about which types of clients are able to buy your product. You must be sure your product will sell before you start to make concrete plans.

Finally, start making rough forecasts by building two scenarios:

- A management case, starting from a realistic but ambitious sales forecast
- A base case, starting from a minimum (often no profit) sales forecast

You need your management scenario as a guideline to manage your business and to present to the partners you need (like financiers) to convince them to join you. The base case scenario is a worst case scenario. This is your early warning indicator for when the business is not performing well. You might show it to financiers to convince them the worst case is a scenario which will probably not occur. Of course, if your base case stills shows profit, this will comfort you and potential investors!

Do not forget to include product development costs, allocated to the period you need to develop your product. While you are developing your product, you will generate no revenues. You need to estimate when you expect your first revenues and calculate the time needed to reach the break-even point (zero profit). Especially to investors, the break-even point is an important indicator of the potential profitability of the business. Crossing the break even point means your business model is working. Although no golden rules exist, a reasonable break-even period would be 3 years (management case) to 5 years (base case).

Tool 2: Simple financial model for making a first forecast

In this section on Finance, we provide an overview of the key issues related to financing your business. Make sure you spend adequate time on these issues. Enthusiastic entrepreneurs often fail to secure adequate financing, and/or forget that if the cash runs out, the business is dead. If necessary, obtain professional advice.

Credit need and cash flow

To assess the amount of financing you will need, answer the following questions:

- How much money will it take to launch and run the business successfully?
- How much cash do you need to have available at any given moment for the company to be able to meet its liabilities?
- How, and from where, can you obtain the necessary funds?

The simple financial model, introduced as tool 2 in the previous paragraph, can be used to make a first estimation of the credit need. Please note: this is a cash flow model, referring to actual money flows. Your profit and loss statement will look different, because you will capitalize most investment. For a young business, cash is king!

Cash is king: cash flow

In short, cash flow is the difference between cash in and cash out of the company. When you correct the net profit with non-cash items like deferred taxes, provisions, amortization and depreciation (these are costs, but not cash outs) you calculate the "operational" cash flow. This money is used to finance investments and the working capital mutations. The remaining cash flow is called "free" or "net cash flow".

EUR 1000	**Year 1**
Net Profit (NP)	100
Ammortisation and deprecialtion (A + D)	20
Investments (I)	-30
Operational Cash Flow (OCF)	90
Mutation Trade Debtors (+/-) (MTD)	10
Mutation Stock (+/-) (MS)	5
Mutation Trade Creditors (+/-) (MTC)	10
Net Cash Flow (OCF-MTD-MS+MTC)	85

Source: Micro Water Facility

The free cash flow can be used to:
- Repay debts
- Allow dividend payments (sometimes these are mandatory)
- Strengthen the company's liquidity position
- Finance business activities like expansion and investments

Exhibit 4: A cash flow example

A simple way to present your results is to fill in a "uses and sources" overview. The uses are the different components of the credit need; the sources are the different sources of capital.

Uses (EUR)	**Year 1**	**Year 2**	**Sources (EUR)**	**Year 1**	**Year 2**
Product development	25000	15000	Own Means	25000	35000
Market Research	5000	10000	Informal Capital	10000	10000
Demonstration Pilot	10000	15000			
Inventory	5000	0			
Working Capital	0	25000	Credit Need	15000	30000
Head Room	5000	10000			
	50000	75000		50000	75000

Exhibit 5: Example of a financial model

When you start your company, you will be incurring costs before you generate income: you will have a negative cash flow. The cash flow will remain negative until the point at which the incoming payments equal the money going out – the cash break-even point. The total negative cash flow until the break-even point must be financed in advance. For example, if you expect your company to have a cumulative negative cash flow of €100,000, you need to ensure that financing of at least €100,000 (plus a bit extra, which is called "head room") is available before you launch your business.

Blend of financial instruments

Different types of financial means exist. Which type you should aim for depends on your personal circumstances of your product.

- Own means (including the cost of your time) and informal capital
- Subsidies and grants
- Seed money and venture capital
- Near-equity and loans.

Tool 3: Financial options

At each stage the business requires a different type of financing, as the risk profile of the business differs. But because your business will develop dynamically, the different types of financing will not follow each other in a straightforward sequence. Create a blend of different financial instructments that fit the phase your business is in and be ready to finance your next step. In the first stages, creating a blend of the first two instruments is important; financing the next step will require seed money and/or loans.

Own means and informal capital

In the initial phase of their existence most ventures are financed partly out of own means and partly by family or friends. This allows you to stay in control and the risky startup phase is financed on very friendly conditions. On the other hand, these funds are often limited and conflicts may arise when expectations are not met. Do not forget that the cost of your own time represents a financial investment as well; you could use that time to make money doing something else, after all.

Subsidies and grants

A whole range of subsidies and grants are available for a typical startup. For instance, there is a range of possibilities for getting additional financial support for setting up small business enterprises selling water solutions to the BOP market. You should be aware that most subsidies have many conditions you have to comply with and report on. This can be time consuming. Also, most of the time you need to bring in own means, capital or an in-kind contribution as a condition for attract subsidies. To meet reporting obligations it is important to have a financial accounting system and a proper overview of the hours you spend on product development.

Key deliverables

By the end of Step I you will be able to draft a blueprint of your product, market and business, together with a simple forecast model. We have developed three tools to help you to summarize all your research, thoughts and figures:

- A short one-pager to present your idea to partners and possible investors
- A quick scan to check and assess all business aspects of your idea
- A very simple forecast model, which might help you to make your first calculations

Remember:
- Keep it simple
- Start small
- Try, try, try again!

All are included in this Toolkit and are easy to use. We advise you to start writing down all aspects you have figured out, even though you still have some questions or blank spots to figure out. You might become overwhelmed by all the activities you still have to do, or be disappointed when the calculations do not support a feasible business model. Our three-part motto: Keep it simple, start small and try, try, try again!

Tool 2: Simple financial model to make a first forecast
Tool 4: One-pager to present your idea
Tool 5: Quick scan to assess and check all business aspects of our idea

Frequently asked questions:

Question	Answer
It seems to be very hard to NOT like an idea in this phase of the NBD process. What can I do to be more objective about judging my own ideas?	Do your desk research. Seek help from friends, NGOs and network partners who can challenge you. Do some simple financial mathematics.
Why don't I just skip this step and move to Step II? The real work seems to be done there.	In many or even most cases, investing the thousands of Euros required to make a business plan is wasted. Doing Step I saves you this expense.

Step II: Making plans

At the end of the Step I you will have a clear outline of what you want to do and how. The next step is to develop the outline into a solid business plan. Your business plan must give clear and concise information on all aspects of the proposed business. This includes practical matters concerning business startup, operation and management and analyses of costs, sales, profitability and projected growth. "Starting Up"[1] presents the necessary background information and a standard structure for a business plan. If you address all the elements of the structure in this Step II you will obtain a comprehensive and practical business plan. Therefore, this Step can be seen as extensive commentary on the Starting Up business plan model; it is not a business plan writing guide in itself.

The elements of Step II are the same as in Step I, but the approach is more thorough.

Tool 6: Business Plan Format

Further reading:
Attachment 5: Starting up

Steps	
Product 	- product development - lab testing, compliance and certification - value proposition
Market 	- market research - pra techniques
Business 	- start-up team - organization - distribution - network building - realization schedule
Finance 	- cash flow - seed money and venture capital
Key deliverables 	- business plan

This section discusses product development for Appropriate Technology, complying with laws and regulations, formulating the advantages of your product (value proposition) and techniques to identify customer needs (Participatory Rural Appraisal).

Product development for Appropriate Technologies

Developing your product is a creative and iterative process, which converges on a solution as you work through versions and drafts. Again and again, you compare the advantages of your product with the needs and problems of your customers. Part of a BOP strategy is to co-develop your product with your future clients. Talk to Western NGOs who work closely together with local NGOs and have a good view of the market. If they like the idea, plan a field visit and talk to local people, NGOs or other local organizations.

[1] Kubr et al. (1998)

Product development

Mantijn Nitzsche, director of Aqua-Aero Watersystems B.V. (www.aaws.nl) explains his vision on product development: *"It is like building a house using Lego blocks together with your architect. He starts building the walls and the roof. You mention that you need to create a door because your client likes to stay in the house instead of watching it. A window would be nice as well, because your client likes to have light in the house and a nice view of the street. The architect builds a garage next to the house to protect your client's car against rain and thieves, and then you add: a garden would be beautiful to work in or rest after a hard day's work. That is how innovation works: you develop your product by switching from your product's benefits to the needs of your clients; it's an iterative process and you never know where it will end!"*

A general approach that can be used to fit your idea or product to the needs of your customers is the "Excellerator", a method developed by Excellerator (www.excellerator.nl). Start by defining the most important trends and market developments that underpin your idea. The next step is to identify your clients and their needs and problems. Further develop your product by switching from your idea to the needs of your clients again and again.

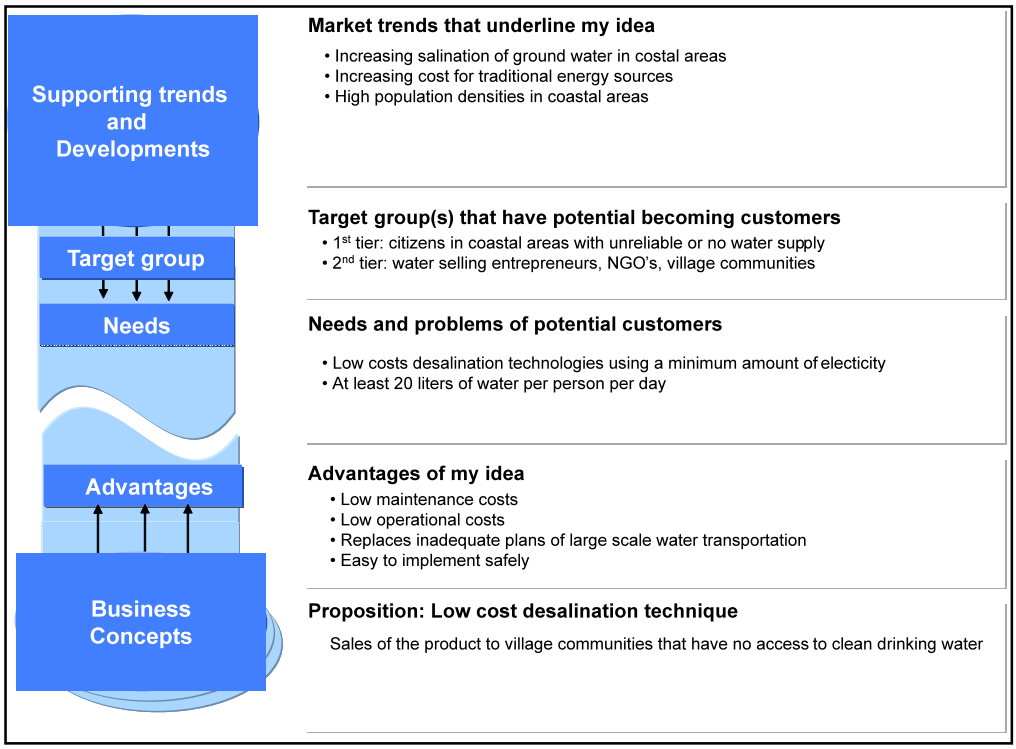


Exhibit 6: The Excellerator (www.excellerator.nl)

You might have a look at the needs of your future clients in depth. Try to get direct contact with end users in villages. You will need an interpreter because these people often only understand the local language. They can often be found in the nearest town (or check your hotel). When arriving at the village, the village elder is the person to talk to (be sure to observe local customs in approaching the village elder!). If he is positive, he will arrange a meeting with the community and useful information can be gathered. Having obtained the first facts, you will need to cross-check them with a local NGO. Although this method takes some time, it will give you a good idea of the appropriateness of the product. If you need a quick scan on your product, you might contact some specialists working at NGOs or educational institutes who have a lot of experience "in the field".

Using student potential

Jan de Koning from Zonnewater explains how he was able to develop his product in a very cost-effective way: "*There is an institute called IHE in Delft, where each year tens of mostly technical students from foreign countries (many in Africa) come to study. They are highly knowledgeable about the local conditions, critical and very willing to be of assistance. They form a kind of ideal, close at hand, testing committee for AT solutions for water and sanitation. If you use this potential wisely you will be able to develop your product very effectively at relatively low cost."* Also there are technical colleges everywhere that can bring you into contact with students looking for technical internships. The product development phase of an AT water or sanitation solution is a very welcome subject.

Attached to the Toolkit you will find the AT Checklist, including guidance on how to use it. The checklist is useful as a self assessment tool, but it can also be used to compare different types of products.

Further reading:
Info Sheet 4: Product development, the case of the Basic Water Needs Foundation

Tool 7: AT Checklist

Lab testing, compliance and certification

Prototypes of your product need to be tested, and when the final prototype is ready it will need some kind of certification or third party assessment.

You may be able to test your product during the product development phase in your own laboratory. However, if you do not have the facilities or the skills to do this, you must outsource the work to one of the institutes equipped to conduct these tests. In the Netherlands, for example, both KIWA and Wetsus, perform product testing and third party certification. Also there are several commercial organizations that can help with water quality assessments. Entrepreneurs can do the testing in their own facilities or collect samples in the field and go to these facilities for the necessary analysis of the water samples.

Water quality criteria

The WHO norms for safe drinking water are the most widely accepted water quality criteria. These can be found on the internet: www.who.int

National governments also set criteria for drinking water quality for piped or bottled water. Although your product may perhaps not be used for delivering piped or bottled water, it would make sense to familiarize yourself with these criteria and make sure that your product is in compliance or, if not, that you understand and know where it deviates from these criteria so that you can explain this if you are asked about it.

Compliance with legislation on food contact materials

Your product will most likely be in direct contact with drinking water. Although most countries have no legislation in place covering materials like drinking water filters, it makes sense to comply with the general legislation on food contact materials. You are not legally bound to do this, but it is good business practice to do so.

Legislation on food contact materials is different in each country. As an example, we examine European legislation, which is widely recognized as one of the most complete sets of regulations in the world. Compliance with this legislation is a sound basis to start from.

However, it does not relieve you of the requirement to check the legislation in the country of production and country of sale of your product. And if European standards of legislation will make your product unaffordable, you may consider falling back on less stringent norms.

European legislation on food contact materials

Central in European legislation is the Council Directive 78/142/EEC. Within this framework article 3 is the central article: all food contact materials have to be manufactured in compliance with GMP so that constituents do not transfer to food in such quantities that it endangers human health or bring about an unacceptable change in the composition or organoleptic characteristics of food.

But how can you demonstrate that your product poses no harm to food safety? The EU has drawn up directives for most of the relevant industrial sectors. An important one is the “Plastics Directive”, which deals with materials and articles made of plastic that are intended to come into contact with foodstuffs. The directive contains guidance on how to demonstrate that your product is safe. It also sets guidelines on the migration of materials from the product to the food, limiting these to quantities that should pose no harm to public health. The directive works with a positive list detailing all components allowed for use in food contact materials (monomers, additives, colorants, etc.), sets specific migration limits for components and gives calculation factors to be considered in your migration tests and calculations. You will need an expert lab to perform the migration tests or calculations if you need to have them done.

As an entrepreneur putting together a consumer product, you have to get a “declaration of compliance” from your suppliers. Such a declaration states that the product does not contain components that can migrate to food in such amounts that it poses a risk to public health. Often this can only be stated for a specific application, which you need to specify (e.g. a sheet of x mm thick and a total surface area of y dm2 in contact with z grams of water for v days at w degrees Celsius).

Now here is the catch: in principle, products for drinking water are not included in the Plastics Directive. The directive can be used to determine whether the product would be safe for food contact, where the food is liquid – but the directive has no legal status for water. However, article 3 of the above Council Directive 78/142/EEC remains applicable: you have to show that the material is safe. This can only be done by providing supporting data and calculations.

The complete legislation on food contact materials is a lot more complex than this. This section of the Toolkit is therefore only intended to be a brief introduction to the legislation and does not provide guidance on compiling your own food contact compliance statements. You should always consult an expert to ensure that you meet all your obligations in the proper manner.

Exhibit 7: European legislation on food contact materials

Value proposition

The value proposition is built up of different elements (see Exhibit 8: The value proposition ***(BiD Consult)***. The basis is formed by the hard and soft product features (see below for a definition of "hard" and "soft"). The next building block is the environment in which the product is offered, consisting of the competition and target customer group. The last element of the value proposition results from the interaction between the customer target group and the product: the customer insights. The value proposition answers important questions: Who will buy the product? Why should they buy it from us? What will they get? How much will it cost?

Value proposition

A specific promise of benefits provided to target customers that differ from competitors at an explicit price.

Hard and soft product features

The product benefits are an important aspect in your market research. To determine these benefits, use a product description that includes the hard features of the product, such as:

- Amount of water filtered per hour
- Content of the vessel
- Lifetime of the filtering element
- Cost of the product
- Cost of the consumables
- Size of the product
- Weight of the product.

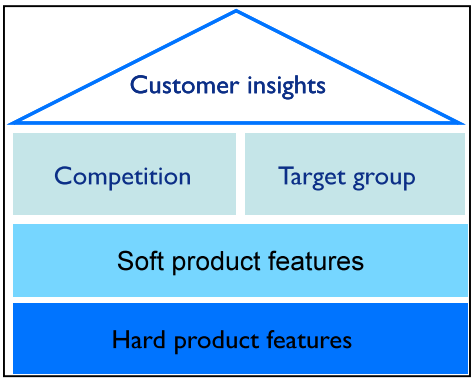


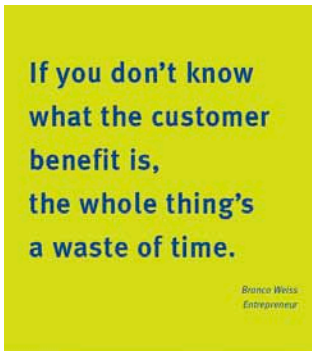
Exhibit 8: The value proposition (BiD Consult)

The softer promises you make to the customer – for instance a water filter could very well alter the taste and smell of the water – provide additional customer benefits. Possible customer benefits of a water filter can be:

- Improved taste of the water
- Improved smell of the water
- Improved clarity of the water
- Reduced illness rates
- Peace of mind
- Safety
- Better temperature of the water (cooler)
- Being a good parent
- Social status.

Differentiation from competition

An important part of the value proposition is the competitive environment. Describe clearly what makes your product different from the competition. Remember that you do not always have to compete with similar products; you could also compete against another technology (substitutes). For instance, a water filter competes with other water filters, but also with buying bottled water and boiling water. Make a list of competing products and technologies and simply state distinctive features for each. Then determine how to differentiate from each of the listed competitive offerings.



Target group

During Step I you already defined the target group as being the most ideal customer segment to sell your product to. Take a look on the criteria you used and compare these with the soft / hard product features. Does your target group's needs match with the value proposition of your product? Do you offer a good alternative compared with competing products in the market?

Customer insights

The softer product features can be accompanied by customer insights arising from the testing sessions. These could provide additional reasons for a customer to purchase the product and could be used in your marketing effort.

Now you have built up the first draft of your value proposition, which is an important addition to your business plan. It can be used to show potential investors what your product is all

about and how it will beat the competition. It shows that you understand your product and your customers' needs and that there is a fit. Besides, writing down your value proposition in a structured way makes it more transparent. It will help you think about how to improve your proposition and allows you to be challenged by others on this.

Market research

The market needs to be researched to identify the potential for your product. Where is the market? How big is it? How should you approach it? We have split the research process into two steps: general market research and specific market research.

General market research (macro environment)

The first step studies demographic data, total market data and general information on the market. General market research is usually desk research. Data are collected from as many sources as possible and then interpreted to obtain an overall picture of the market situation.

Try to collect as much data as you can on the relevant market. For instance, if you are to enter the market for water purification devices in India, collect data on:

- Water sources used in the different states of India
- Number of water filters sold
- Distribution channels normally used to sell water filters (e.g. information may be obtained from the local chamber of commerce or government, potential distribution partners and websites of competitors)
- NGOs active in water projects
- State profiles, ranking the states on relevant aspects (see Chapter 3)

Further reading:
Attachment 1: Census of India 2001

Use the collected general market data to build up a picture of the total market.

Specific market research (micro environment)

The second step, specific market research, involves going to the market (by phone or plane) and interviewing potential customer groups to get specific data. The information collected from these different sources only describe a small segment of the total market, but they are important because they provide more qualitative information about the market and how your product might be received by this market.

In the total target population of customers, certain groups represent the ideal customer for your product(s). Identify them and learn as much about them as you can. Social entrepreneurs are often assisted by their NGO partners in this effort, who often practice what we call Participatory Rural Appraisal (PRA, see following section) in which they use local customer groups to collect feedback on (new) products and services.. If you do not have a local partner, or they do not use PRA, you can set up a specific market research yourself. It is not complicated, but it can be a lot of work.

A simple specific market research program may involve the following steps:

- List the consumer aspects you find important for your product and market.
- List your product and its characteristics.
- Interview potential customers about your (new) product.
- Be sure to collect all the consumer aspects of the customers.

You will learn a lot about your potential customers, but it requires a significant amount of time. Always balance how much time you can spend against what you might get out of it.

Further reading:
Info Sheet 5: Market research Ecosan

Participatory Rural Appraisal

Interviewing customers in BOP markets is very different from a market survey on the streets of a European city, with the background support of a large population database. Poor rural customers in villages and dwellings spread over several hundreds of kilometers; in urban areas they are usually found in a large number of different slums. Also, the urban marketing environment is totally different from rural markets. Rural consumer behavior is "deeply tied to their culture and belief system" (www.ndcindia.com). Fortunately, there are market research firms specializing in researching the preferences of BOP consumers, ranging from top-end firms like ORG-MARG of AC Nielson (www.in.nielsen.com) to smaller firms like RS Market Research Solutions (researchsolutionindia.tradeindia.com) and N&D Communications (www.ruralone.com). However, water and sanitation for BOP consumers are not key areas for these firms.

Instead, it may be better to carry out a PRA (see info sheet 6 for more details) through a local university, consultant or NGO. While PRA is routinely applied in health, education, water supply, sanitation and hygiene, forestry, and poverty projects, it can also be used to elicit information on potential rural – or urban – markets. There are at least three advantages. First, individuals or organizations familiar with the target community will find it easier (than you!) to approach and elicit information. Second, it could be part of an already planned bigger questionnaire developed to collect information on a range of topics from a group. Third, you can have a greater say in the issues to be covered, the methods to be used, and how the results are to be presented.

Further reading:
Info Sheet 6: Participatory Rural Appraisal

When you have worked out your idea, defined your product and market, developed your value proposition and drafted your business model, it is time to set up your organization. This does not mean you actually start buying everything you need. The purpose of setting up your organization is to make sure that you are not forgetting anything. Identify everything you need and plan the activities.

Your organization must be fully equipped to support your strategy. This does not mean that you have to do it all yourself. You must make decisions on insourcing, outsourcing and strategic partnerships. Above all, it must be clear which activities your organization must perform to make your plan work.

The diagram below shows the main elements of a business plan. It is a *general* overview that reflects the key philosophy and activities of a company. By now you know what your view is on water and sanitation issues (vision) and how your business is going to contribute to a possible solution (mission), both included in element I in the diagram. You have started to outline a strategy, focusing on your product, the market and your business model (II). Comparing your product with alternatives has given you insights about the value proposition (III).

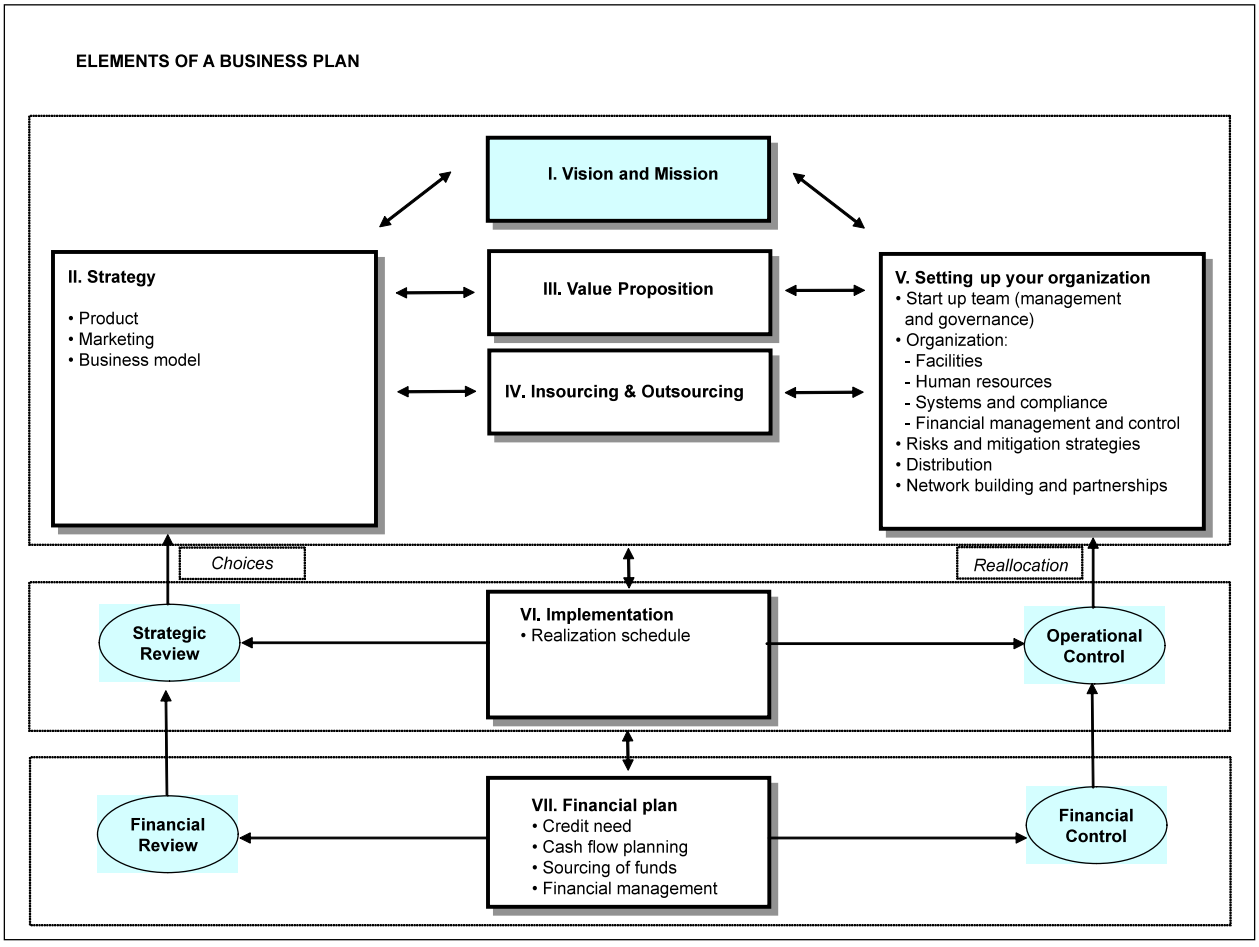


Exhibit 9: Elements of a business plan (Aidenvironment)

Before you set up your company, you must make decisions on insourcing and outsourcing (IV). Clean Water made the decision to outsource production, while Basic Water Needs set up a factory themselves. These decisions directly affect the organization and the amount of investment needed to start up the business.

Small-scale water and sanitation solutions are often innovations or unique modifications of existing techniques. If your product is unique, you should not immediately outsource the production of vital and innovative parts. You want to be sure that the quality of your product meets your clients' expectations and you do not want potential competitors copying your product. On the other hand, producing simple and standard components can be done by others (outsourced to a third party).

While you are setting up and implementing your organization (V and VI)) you have to think and make decisions on the following topics.

- Startup team, management and governance
- Organization
- Risks and mitigation strategies
- Distribution
- Network building and partnerships
- Realization schedule.

Startup team

Basically this process starts with deciding with whom you want to start this venture. Alone? With a friend or someone from your network? Or perhaps with a local partner? The answer depends on your character, skills and personal situation. Also, it depends on where most of the work will need to be done. In addition, an extra partner can bring in additional funds.

The startup team must reflect all competencies needed to set up and run the business. Investors in particular look carefully at the background, competencies, experience and compilation of management teams. Remember: plans are important, but people make the business.

The second step is to decide on an appropriate legal structure. The Chamber of Commerce may be able to give useful advice on this matter. Keep in mind that setting up legal entities in developing countries can take time, so you will have to start as early as possible. The following websites provide good checklists and guidelines.

Dutch legal identities: www.kvk.nl
Indian legal entities: www.rnebizguideindia.org

In the process of establishing your legal entity you often need to appoint directors who are responsible for helping you run the business. Formalize all authorities and responsibilities. It is important to be clear in which cases shareholders have to be consulted or asked for permission. The startup team has to authorize the other managers and employees and this should all be documented clearly and not be in conflict with any applicable laws.

Further reading:
Info Sheet 7: Steps to form an Indian company

Organization

The organization is the physical body of your business and consists of:

- Facilities
- Human resources
- Systems and compliance
- Financial management and control

Facilities: housing, manufacturing, stock building and sourcing

Especially when you aim to launch your product on the BOP market, it is crucial to understand the local market well and engage with the local community. Moreover, customers like to do business with local organizations; besides legal and taxation aspects, culture plays an important role too. You save money when you establish production and distribution locally, as labor costs are (in most cases) cheap and the distance to your sales market is small. In other words, local presence has a lot of advantages.

In some countries it is worthwhile to choose a location in an industrial or special economic zone, which offers good infrastructure, tax incentives or other benefits. More information on choosing the right business location in India can be found at: www.rnebizguideindia.org

Tool 8: Helping you choose a proper location

During this phase you should already start thinking about how to produce your product. The ventures we refer to in this Toolkit tend to outsource the production process to a "Western-based" trusted partner located in their home country. However, in many cases the first prototype was built in their own garage or backyard, using materials and components which they bought from local stores!

Strategic partnerships

Involve professional "Western-based" suppliers or producers from the start. Build strategic partnerships and involve them during the product development and business development stages. Strategic suppliers are willing to invest time and sometimes money in product development: risks, resources and rewards are shared and important relationships are forged.

Involving strategic producers or suppliers during this phase speeds up the market introduction of your product and ensures that production is feasible. This will make potential investors or donors feel more confident about your business and increase the chances of your making successful applications for subsidies. Strategic producers can help you develop your prototype quickly into a demonstration application and finally into a producible design.

When you enter a strategic partnership you have to record all mutual agreements on paper. In this phase you must write an attractive proposal to possible suppliers or producers. Draw up a shortlist of possible candidates and meet with them before making your choice and formalizing your partnership in a Memorandum of Understanding (MOU).

Remember, most successful BOP products are low cost products, produced locally. Strategic suppliers in Western countries mostly benefit from integrating the technology into their existing product portfolio or from the sales of a key component. Focus on these aspects and avoid long-term production contracts.

Exhibit 10: Strategic partnerships

You have to invest money when you are building up stocks, so include the credit you need to cover this when you make your financial calculations. One of the best ways to finance your business is to pay your suppliers late and make your buyers pay early! Stocks require storage space and logistics, which need investments too. How you build up your stocks depend on the business model:

- If you start producing when you receive an order, your stock will be limited to the components and raw materials you need to be able to rapidly start production.
- If you manufacture your product in small series, anticipating orders from prospects, your stock will have a higher volume. Serial production requires stock policy not only for components, but for end products as well.
- Mass production is the opposite of production in response to incoming orders. Your stock volumes will probably be very high. Managing your stock level (keeping it as low as possible) is critical in this case.

Further reading:
Info Sheet 8: Experience in setting up a business organization in India (Basic Water Needs India, Private Limited)

Human resources

"Keep your organization lean and mean" is the best advice when you start up your business. This applies especially to hiring employees; not only do they have to be paid; you also have to educate, coach and guide them, and manage the administrative workload.

Identify the key positions in the company. These positions depend on which strategic activities you definitely do not want to outsource. Describing key positions gives you insight into the activities which derive from them and makes it easier to draft a profile of your ideal candidate. It helps you to decide whether you should hire someone in your home country (e.g. the Netherlands) or abroad.

Investigate which legal and social regulations are relevant when hiring staff. Social insurance, taxes and pensions cause extra costs. Local Chambers of Commerce or business support offices can provide you with useful information. Hiring personnel also puts pressure on your overhead expenses, as do communication costs, day-to-day travel expenses and office equipment. In this phase, the easiest way to budget for this overhead is to calculate it as a percentage (e.g. 20–30%) of the salary and specify these costs in more detail when you make your final budgets.

In developing countries, finding qualified and dependable personnel can be a major problem. It is also more difficult to rely on formal qualifications as you do not have any references for them. Start by offering temporary contracts, which gives you the chance to observe your employees working behavior, and ask for third party references.

Systems and compliance

Your business can be jeopardized if you do not comply with the relevant legislation, regulations, certifications, industrial standards, taxation and accounting principles, etc. Look at your core business and identify which requirements you have to comply with. This Toolkit cannot give a complete overview as it depends on your business and the country in which you are operating. Start early because the process of applying for licenses or waiting for approvals takes time. Obtain advice from local consultants, advisors, lawyers or accountants. Such advice is very expensive in the Netherlands, but much cheaper in developing countries.

Financial management and control

One of the sections in Step IV describes the systems you should take into account when launching your product. As financial management and control is an important aspect in running a business, you should start by deciding on a good financial system to keep track of budgets and forecasts.

Financial management consists of three different areas:

- Financial accounting: the field of accountancy concerned with the preparation of formal financial statements for decision makers, such as investors, suppliers, banks, employees, government agencies, and other stakeholders.
- Management accounting: the activities concerned with the provisions and use of accounting information to managers within organizations, to provide them with the basis to make informed business decisions that will allow them to be better equipped in their management and control functions.
- Corporate Finance: an area of finance dealing with the financial decisions corporations make and the tools and analysis used to make these decisions. The primary goal of corporate finance is to maximize corporate value while reducing the firm's financial risks.

Further reading:
http://en.wikipedia.org/wiki/Financial_accountancy
http://en.wikipedia.org/wiki/Corporate_finance
http://en.wikipedia.org/wiki/Management_accounting

As financial reporting obligations might be applicable, depending on the legal entity, set up a proper financial administration that delivers information that is easy to convert into financial statements (financial advisors, accountants and bookkeepers might give you useful information). Many affordable and user-friendly bookkeeping systems are available and worth investing in, including web-based solutions.

The type of enterprises covered by this Toolkit will not have much to do with corporate finance issues. Nevertheless, it is important to give consideration to managing business risks, which is a part of corporate finance activities. This will enable you to secure access to the financial resources you need to continue and scale up your business. We will talk about business risks in the next section; ways of securing access to financial resources will be explained in Step IV.

For the time being, though, you should focus on management accounting. During all the steps you take in launching your product you have to plan, attract, pay, manage and control all the resources needed to execute your business plan. When we talk about financial management and control, we will concentrate on managing your financial resources as a business activity. The finance sections will deal with the different type of financial sources and instruments.

In managing your financial resources, three different types of activities are important to understand and execute:

- Cost calculation: calculating the cost price of your product
- Financial planning: making financial projections and budgets
- Financial control: checking budgets with the actual realization

All activities you are planning to set up will have an impact on your cost base (the costs derived from your business activities). Include these costs in your cost price calculations (refine the calculations you made during Step I). By now you have a better understanding of your market and the sales price of your product. Estimate sales volumes and refine your revenue forecast. Because the process of setting up your business has an impact on your investment forecast, refine your investment needs and associated credit needs. We will deal with financial control later on in this chapter.

Business risks and mitigation strategies

The risks of a water and sanitation business depend on the specific situation (technique, product, country, type of client). A few general risks:

- Macroeconomic, political and country risks are always present and very difficult to manage. It is important to understanding the local institutional framework and form a partnership with local organizations that are familiar with managing the stakeholders (from local authorities to central government).
- Market risks are related to the specific behavior of people at the BOP, which are not always known to you, difficult to predict (may change from day to day), and difficult to quantify (large geographical markets, difficult to access). To mitigate this risk, you need to work with trustworthy local organizations on the ground (like NGOs, local business people).
- Competition and concentration in the water and sanitation sector is clearly a risk. The market in this sector is (in most cases) imperfect and inefficient. Products are

subsidized or sponsored, and often given away for free under government and NGO programs. It is important to select your geographical market thoughtfully and research the possibility of unfair competition.

- Production risks are especially associated with local production. It is important to manage issues like sourcing of components, spare parts and hiring staff. Again you need to work with trustworthy local organizations and make good decisions on insourcing and outsourcing.
- Management risks relate to both technical (water or sanitation) and business/economic experience and knowledge. The management team must have a good understanding of the local context and they must be open to working with different partners.
- Compliance risks of water and sanitation have a direct impact on health. Health is a public issue and in most cases it is regulated by the public sector. Businesses have to comply with policies and local regulations or must decide to start the business while "flying under the radar" (see Info Sheet 1).

Distribution

As we explained in Chapter 1, distribution is critical if you want to launch your product in developing countries. Especially if you cater to the BOP market, physical distribution is a complex issue to resolve and these markets will often be unfamiliar to you. During this phase you have to start thinking about how to involve local partners in your business model. Generally speaking, you will have to involve partners for the following issues:

- Awareness raising: creating visibility and word-of-mouth awareness. Your product might be new to your potential users and the need to buy your product is not at the forefront of their mind. Find local partners (who are trusted by your future clients) to create awareness among your potential buyers.
- Capacity building: local training. Explanation will be needed on how to use your product properly. Because your product directly relates to health, you must educate your potential clients. This will create content customers and mitigate the risk of wrong usage which can cause undesirable affects to health, leading to possible claims.
- Import/export: getting your product into the country. Rules on import and export differ from country to country, so you must find local expertise to support you. Embassies, business support offices or local chambers of commerce can help you to find suitable partners.
- Physical distribution: getting your product to your customer. The chambers of commerce can help you to find the right partners to ship your product into and out of the country. Find reliable local partners to distribute your product to remote villages. Southern markets often lack proper infrastructure, which makes it difficult to deliver your product (in one piece!) to your client. A good tip here is to make as much use as possible of existing distribution channels (like markets, fairs, multinationals, school programs).
- Spare parts: after sales. You have to think about setting up or tapping into an effective infrastructure to provide after-sales services like maintenance and repairs. When you design your product keep in mind the components and relevant know-how (technical skills) that must be available in the local market.

Your partners involved in the distribution of your product must provide you with market information as well (especially feedback from your customers). Your partners also have their own agendas, so you must budget several trips abroad to check which partners fit into your business and how customers react to your product.

Network building and partnerships

By now you have probably noticed the importance of creating partnerships. The best advice we can give you is to focus on partnerships that enhance the launch of your product. Building a consortium of strong and committed partners is an important aspect during this phase.

The different types of partners can be separated into six groups:

- Financial partners, providing you with financial resources, sometimes in combination with management assistance
- Network partners, providing you with all kinds of different partners – often focused on a specific sector (e.g. Netherlands Water Partnership) or a type of partner (e.g. Streams of Knowledge)
- Operational partners, providing you with resources which enhance the operations of your business (e.g. production, distribution, etc.)
- Field partners, providing you with resources which facilitate the launch of your product on a specific market (e.g. a NGO providing capacity building)
- Knowledge partners, providing you with specific knowledge on technical and local social aspects, local regulations, legal and tax matters, etc.
- Launch customer, providing you literally with your first order and closely involved in the demonstration of your product, with a network which facilitates you in scaling up your product

At a minimum, you should work with a knowledge partner, an operational partner, and a launch customer.

"One of the most important things I learned when launching our filter in developing markets is the importance of a strong network. You need to find the right partners, and the type of partners change during the process of developing your idea into a successful product."
Klaas van der Ven, director of Basic Water Needs India Pvt Ltd.

How do I find suitable partners? The best way to start is to use your own network and focus on finding a partner with a good reputation and, ideally, a reputable brand. This will help you to find other partners and, eventually, customers; a solid trusted partner with a splendid reputation will convince others to join you. Network partners or specialized organizations like the Micro Water Facility (www.microwaterfacility.org) can help you to identify and contact possible partners.

The list describes key factors to think about in partnerships

- Focus, focus and focus again on finding a launch customer
- Ask reliable partners to recommend others
- Get all partners to commit to a specific goal
- Determine and agree on mutual benefits
- Appreciate differences and accept different agendas
- Decide when and how to quit
- Build trust

"Business partnerships are like any relationship – you have to kiss a few frogs before finding the ideal companion."
Robert Kiyosaki, investor, businessman, self-help author and motivational speaker.

Realization Schedule

Read the section related to this subject in “Starting Up”. Doing business in developing countries takes much more time – one of the entrepreneurs involved in the Toolkit included at least 50% extra time. We have identified five important stumbling blocks in planning a water and sanitation business catering to BOP markets:

- Complying with government procedures and regulations, and applying for all necessary permits and approvals often presents problems.
- Local financial infrastructures (bank accounts, payment systems) are still developing and therefore still bureaucratic and inefficient.
- Marketing your product. In many of the cases we have investigated, a lot of time and resources had to be spent on awareness raising of clients and capacity building of partners.
- Operating the local business. You need to have strong and reliable local management to execute the planning properly.
- Attracting appropriate and sufficient financial resources. Many funds are available, but are often difficult to apply for (procedures, conditions), as many investors have difficulties understanding the business case and the specific business risks involved in the BOP.

Finance

In this section, we talk about specific characteristics of cash flow in water and sanitation businesses and explain the role of informal investors and venture capitalists.

Cash flow

The willingness of investors to finance your business depends on expected cash flow weighed against business risk and the amount of capital required to generate the cash flow. Cash flow is defined as the actual money which comes into a business in a period; it can also be calculated as net profit plus depreciation minus investments plus changes in working capital. Business risks determine the predictability of the cash flow. The better you mitigate your business risks, the better you can predict your cash flow, and the easier it will be for you to convince investors to finance your business.

Cash flow out of a water and sanitation business catering to the BOP market is not that different from other types of businesses, but a few issues are worth mentioning:

- The cash flow will either be derived from high volumes sales with low margins in a retail business model (which is often the case with products for use in households, like filters) or low volume sales with high margins in a business-to-business or business-to-NGO model (which is often the case with community-based applications, like community toilets).
- To create a fair, local value-added model, partners involved in the business model (e.g. distributors) will require a reward for their activities or involvement, which comes out of your profit. Assuming a low or medium margin business model (most likely the situation you are in), you cannot involve too many partners in the business model as this will put pressure on your margin and on your cash flow, so choose the number of partners you work with carefully.

- Starting small and planning to scale up (as we advise you to do) will lead to “lean and mean”, or low overhead, businesses: the depreciation and investment component is low, so the cash flow profile will rely on the quality of your net profit.
- Whether a business is capitalized or not (e.g. when you have few investments in machines), scaling up always influences your working capital: stocks will grow and trade debtors need to be financed.

As we explained in Step I, there are four basic types of financing sources:

- Own means and informal capital
- Subsidies and grants
- Seed money and venture capital
- Near-equity and loans

During this phase you probably still have to focus on your own capital and the grants and subsidies you need to develop and pilot your product. But you have to think about bridging the gap between grants/subsidies and regular credit (loan) facilities. This gap is filled with the third type, external equity.

Further reading:
Info Sheet 9: Differences between equity and loans

Seed money and venture capital

When own means, informal capital, subsidies and grants are not sufficient or no longer an option, you will probably have to look for seed money, which is provided by an informal investor, also called a “business angel” or “angel investor”. Business angels are private, often highly professional investors with a personal interest (socially or professionally) in their preferred sector. Most will take a minority equity stake in the business. The British and Dutch TV show Business Dragons features business angels. Their experience and network can be very important to your business. Sometimes business angels like to be involved more closely, which can be useful but also difficult – especially if you want to make decisions yourself. So it is important to choose the right person and not only focus on his or her money!

Venture capitalists (VCs) are professional investors. They work at arm’s length and invest through funds together with third parties (e.g. banks) to spread the risk and revenues. That is why they have a financial focus: they have to make a good return on the investment in order to keep other investors satisfied. They also work with complex documentation to enhance their legal position and their control in the business. They need this control so that they can put the breaks on if the business looks like failing.

VCs either invest at an early stage, at the pre-market launch, or at a late stage when the business is running and capital is needed to grow. It is important to know if VCs are interested in minority or majority stakes, as most VCs have a clear and rigid point of view on this. Often, VCs will aim for a sale of their stake in 3-5 years (through an Initial Public Offering on the stock market or through a sale to a corporation). VCs can add value by coaching you on business development, and your business might benefit from their professional attitude. VCs bring an extensive network with them, which is very useful in developing partnerships.

It is important to agree with the VC on their strategy for creating value out of the investment. VCs can create value through:

- An exit strategy (sale of their equity stake)
- Buy and Build strategy (combining different companies, creating synergies)

These strategies affect your company strategy and you should create a workable solution to meet all expectations.

Often the ventures we talk about in this guide will seek for funds from social VCs. These VCs invest money in companies not just to achieve financial returns. A typical social VC focused on water is Acumen.

A social venture fund: Acumen

Acumen is a social venture fund, focusing, among others, on water and health. Its head office is in New York, with branches in Nairobi, Hyderabad, and Karachi. Currently (2008) 5 people work in the Indian branch. Acumen India has €7.6 million of assets in portfolio, of which €4.3 million is committed (2007). In 2008 Acumen expects the Indian portfolio to grow to €12.9 million.
Acumen uses several criteria to assess a proposal:

- The quality of senior management
- The intention of management underlying the decision to enter the business
- The social impact of the proposal
- Financial sustainability (revenue model)
- Scalability (to a national level, based on the product, business model and quality of senior management)

Acumen's mission is, ideally, to target the poorest of the poor, but slightly above poverty levels will comply with the policy. Cross-subsidy business models (cash flow gains from sales to wealthy clients are used to subsidize sales to poor people) are accepted. The affordability of products is a key factor in decision making.

Exhibit 11: Acumen fund

We finish this section by giving you a few tips if you decide to attract equity.

- Try to keep control of the business by keeping a minimum of 50% of the shares.
- Do not accept too many clauses that restrict you from selling or pledging your shares.
- Always negotiate the right of first refusal if your investor sells his/her shares, and try to make agreements up front on how the share price will be calculated.
- Stay in control of your business as far as you want to be, and put all agreements on this topic in the shareholders agreement.
- Agree on clear procedures in the event of a possible conflict between you and your investor.
- Offer preferred shares when you expect profits to increase more quickly than the investor expects.

Further reading:
http://en.wikipedia.org/wiki/Venture_capital

Key deliverables

The key deliverable in this Step II is a business plan, generally a text document containing the sections outlined above. This section, together with Starting Up, should have yielded a professional business plan which is well targeted to your situation and those meant to read i, such as potential partners and investors.

During this process, you will have developed a better grasp of the way your business and organization will work. You have refined your revenue model, cost price and credit need. You can start to work on a more sophisticated forecast, including your projected cash flow. You also have a clearer idea of your product and market. These insights, together with the financial calculations, result in a solid business plan. You need this plan to convince investors to invest in your business and to make solid estimates of the budgets required to cover the development of your product.

We have included two other, more complex financial models in the Toolkit, one developed by the BiD Network and one by Micro Water Facility, together with a business plan format.

Tool 6: Business Plan Format
Tool 9: BID Financial Model Format
Tool 10: MWF Financial Model Format

Frequently asked questions:

Question	Answer
How can I minimize development costs?	Use students to work for you. Plan well. Borrow what you can.
Who might challenge me on my ideas?	Use foreign students, for example those at UNESCA-IHE in Delft, as a forum to challenge your ideas. They have in-the-field experience, are well educated and motivated to work with you to create better solutions.
How do I get in contact with potential (social) investors or other groups that I can use to finance my business?	Tool 3 will give you an overview of possible financiers. You might contact organizations like Micro Water Facility which provide financial engineering services.
I find it hard to find data for market research. What should I do?	Market statistics can be found on the internet easily. All major NGO's and intra governmental organizations (like World Bank or Asian Development Bank) have market statistics on their websites. Several commercial companies like Baytel provide specific market research on small scale water products.
How do I know my competition?	Desk research, Western and local interviews

Step III: Field Testing

Step II, the making of your business plan, involved a lot of planning, market assessment and product development. Now you are ready to proof your product and business concept. In this third step you will focus on testing the technical concept, the pricing and revenue model and the value proposition. Based on the outcomes of the tests, you can fine-tune your business plan and prepare the market introduction. Testing your product in the local market will give you the opportunity to find the local partners you will probably need in order to set up your local business.

Steps	
Product 	- technical pilot - commercial pilot - diversifying product applications
Market 	- social marketing
Business 	- setting up your local organization
Finance 	- finding local financial partners
Key deliverables 	- pilot project(s) in progress - adjusted business plan

To prepare yourself before field testing you must:

- Have a solid business plan.
- Have a separate realization schedule (or implementation plan) of the field test.
- Have all financial funds in place to finance the field test.
- Have all partners on board to execute the field test.

During field testing you will have to:

- Test the product technically and commercially.
- Test and refine your marketing strategy.
- Prepare yourself to set up your organization locally.
- Prepare yourself to attract local financial funds.

In this section we advise you to spend adequate time on the commercial pilot of your product as most water and sanitation entrepreneurs we met tend to focus on the technical aspects of the field testing.

As you are approaching the end of the initial product development, your final prototype is now ready for testing in a “real life” environment. Testing under field conditions is not only important from a technical point of view; it is also important for your marketing and financing. You need to demonstrate convincingly and objectively to customers and investors that your product performs well.

Two kinds of pilots are important here; the technical and the commercial pilot. The following paragraph deals with the technical pilot, whereas the next paragraph discusses the commercial pilot.

Technical pilot

The purpose of a technical pilot is to determine whether your products work as designed and intended. When developing a technical pilot, you have to take into consideration the following aspects:

- A third party must be involved to ensure objectivity (testing institutions, universities, NGOs with testing/analytical capabilities, etc.).
- Test conditions should reflect final future working conditions.
- All important parameters need to be assessed. These may vary from product to product, but remember that potential investors/customers are often knowledgeable about this technology; they will notice if relevant information is missing. Take time before testing to determine all the data/parameters that need to be collected.

The field test(s) need to be well documented and analyses need to be done by reputable institutions/laboratories. The best procedure is to compile a complete report on the final field test and provide this to potential investors.

Conducting a field test takes a lot of time and resources. Approach a university and ask about internship students. Employing students minimizes your labor costs, but you still have knowledgeable people working on the case. Some universities have also acquired experience with the BOP market (TU Delft for instance).

Further reading:
Info Sheet 4: Product development, the case of the Basic Water Needs Foundation

Commercial pilot

The purpose of a commercial pilot is to determine if your product and the intended marketing mix fit the intended market. One element is whether the pricing of your product is right. You should also check whether the target consumer group you had in mind is actually the group that will buy your product, and to check your market communication (e.g. the marketing mix you are thinking of using; see the section on the marketing mix). Are you promoting the product effectively and are you getting through to your target group?

Select an area (or more than one if possible) that you know well and bring the product to market. For example, you could actually sell the product in a limited number. You could use the same distribution channel you are considering using later when you go fully commercial (distribution partner or NGO partner). You might consider selecting a different distribution channel you will use only this once to lower the risk of losing a good distribution partner if results during the field tests do not match expectations immediately.

Keep track of the consumers buying the product and ask for feedback. Sell a significant number of products while trying different price levels in different areas, if possible. Take enough time to collect adequate feedback. Stop after you have sold a predetermined maximum number of articles and continue to collect consumer feedback for at least several weeks after you have stopped the pilot. Meanwhile, start buying competing products and buy them, test them yourself, and compare the results with your own product.

The statistics on a commercial pilot for a household water filter could look like this:

- Number of units sold: 600

- Number of locations used: 3
- Three different price levels tested
- Consumer feedback collected from 200 consumers (out of maximum of 600)

Important parameters to measure your success are:

- Number of units returned
- Number of consumers coming back with problems with the unit
- Verbal feedback from consumers (perhaps using PRA)
- Number of consumers willing to provide feedback on the product
- Failure rate of parts in the product
- Turnover rate of the units at tested price levels, e.g. how many units sold during a certain period at different price levels

Further reading:
Info Sheet 6: Participatory Rural Appraisal

Diversifying product applications

Ask yourself if and how your product can fulfill unexpected needs of local end users. The purpose is to know about and tap into all potential revenue streams from your product. Say your product consists of a solar panel to power a UV light water treatment system. Electricity produced can also be used to recharge cell phones or to operate a fridge, for example. The filtered water can be used in lemonade or for making ice cubes in small bars; the same product can be sold to different client groups for different uses.

thly cost, income, revenues ans cash position for month:……..... **WaterPyramid project, site:……..**

ermanager:…… **Date & signature:……..……..**

Cost regular operations (fuel, transport, small repairs)

		cost	
week 1	from……..to…..		
week 2	from……..to…..		
week 3	from……..to…..		
week 4	from……..to…..		
week 5	from……..to…..		
		0	**total cost operations**

Cost employment salaries

	cost	
watermanager		
assistant		
nightwatchmen		
other:…..		
other:……..		
	0	**total cost salaries**

Other cost (please describe…)

date	item	cost	
		0	**total cost other**
		0	**total cost**

Income out of sales

Jerry cans	nb. sold	income	
week 1		0	
week 2		0	
week 3		0	
week 4		0	
week 5		0	
tot. number	0	0	**total income jerry cans**

Distilled water	nb. sold	income	
week 1		0	NB wholesale price in formula
week 2		0	
week 3		0	
week 4		0	
week 5		0	
tot. number	0	0	**total income distilled water**

Juice	nb. sold	income	
week 1		0	
week 2		0	
week 3		0	
week 4		0	
week 5		0	
tot. number	0	0	**total income other**

Mobiles	nb. charged	income	
week 1		0	
week 2		0	
week 3		0	
week 4		0	
week 5		0	
tot. number	0	0	**total income other**

Ice blocks	nb. sold	income	
week 1		0	
week 2		0	
week 3		0	
week 4		0	
week 5		0	
tot. number	0	0	**total income other**
		0	**total income**

enues this month

total income	0
total cost	0
Revenues	0

Cash position end month

in petty cash box	
on bank account	
total cash positon	0

Exhibit 12: Report as received by AAWS (AAWS)

A good example of product diversification is the way Martijn Nitzsche, director of Aqua-Aero WaterSystems (AAWS) developed different product applications (see the case description in Chapter 3).

AAWS developed the WaterPyramid concept for tropical rural areas. The WaterPyramid makes use of simple technologies to process clean drinking water out of saline, brackish or polluted water. Most of the energy needed to clean the water is obtained from the sun.

“I always ask myself how can I make as much money as possible out of a product or service,” Martijn Nitzsche explains. To answer this question you need to cooperate closely with local entrepreneurs distributing and selling the produced water. These entrepreneurs have the knowledge of local habits and customs and they understand the behavior of their customers. To increase the added value of the water produced by the WaterPyramid, Nitzsche co-created new product applications with local entrepreneurs and end-users.

In Gambia the water is used to make juices, distilled water, ice cubes and drinking water. Meanwhile, cell phones are charged using the solar panel equipment. In order to monitor results, AAWS receives a very straightforward report (illustrated above) on income and costs on a monthly basis. A local NGO supports the process on the ground. This way of reporting is a good example of co-creating a business while checking in the market to see whether new product applications meet the needs of customers and whether they are willing to pay for it.

In this section on market we introduce the traditional “4P” marketing mix you can use to collect and frame your market research, value proposition, price strategy and possible ways to promote your product. In addition we explain 4 social marketing “Ps” which are relevant to take into account when introducing water and sanitation product to BOP markets.

To prepare for the introduction of your product onto the market you need to draw up a marketing plan or approach. In business this is termed the marketing mix: the tools you are going to use to market your product. The marketing mix is generally accepted as the use and specification of the “4 Ps” that describe your strategic position in the marketplace: Product, Price, Place and Promotion. In our case we will focus on social marketing. Since your business model might include social aspects and goals, a social filter can be applied to the more traditional marketing mix.

Social marketing

Social marketing is the systematic application of marketing, along with other concepts and techniques, to achieve specific behavioral goals for a social good. In other words, social marketing is marketing adapted to social imperatives, with “social good” as the primary aim. The aim of commercial marketing is primarily financial. Like commercial marketing, the primary focus in social marketing is on the consumer and learning what people want and need rather than trying to persuade them to buy a product.

Social marketing builds on "normal" marketing, which is focused on the consumer, not on the product. Marketing strategy takes this consumer focus into account by addressing the elements of the marketing mix. This means making decisions about the 4 Ps: (1) Product, (2)

Price, (3) distribution (Place), and (4) Promotion, which are being explained in Starting Up on page 87. However BOP (4P) water and sanitation marketing strategies comprise some specific characteristics:

(1) Product

The social marketing "BOP product" is not necessarily a physical offering. A continuum of products exists, ranging from tangible, physical products (e.g. filters, spare parts), to services (e.g. educating programs, maintenance), practices (e.g., breastfeeding) and finally, more intangible ideas (e.g., environmental protection). As explained before your product must be appropriate.

(2) Price

Your product must be affordable to your clients. When the benefits are perceived to be greater than the costs, there is a greater chance of trial and adoption of the product. These perceptions of costs and benefits can be determined through your field research, and used in pricing the product. In the case of marketing a drinking water filter, you should try to focus on the hidden costs of sickness caused by poor drinking water quality: the loss of income, the costs of medical care, but also the costs of boiling water every day.

(3) Place

As a physical infrastructure often lacks in BOP markets, the way that the product reaches your client is a crucial element in your marketing strategy. By determining the activities and habits of the target audience, as well as their experience and satisfaction with the existing delivery system, you can pinpoint the most ideal means of distribution for the offering. These may include doctors' offices, shopping malls, markets, fairs, mass media or in-home demonstrations. Besides delivering your product, you must ensure accessibility of the offering and quality of the (after-sales) service.

(4) Promotion

You must determine the most effective and efficient channels to reach the BOP market and increase demand. Results out of field testing can also be used to gain publicity for your product at media events and in news stories. By determining the activities and habits of the target audience, you can make decisions on channels to use like public service announcements, paid ads, coupons, media events, editorials, "Tupperware"-style parties or in-store displays.

Additional social marketing "Ps"

(5) Public

This refers to the public domain (local communities and the social environment of the business). You often have many different audiences (stakeholders) that you have to address in order to be successful. "Public" refers to groups affecting your marketing. Public groups include policy makers and those who are involved in some way with either approval or implementation of the product. NGOs and media that might influence public opinion are important stakeholders to take notice of as well.

(6) Policy

Social marketing programs can be effective in motivating individual behavior change, but this is difficult to sustain unless the market you are focusing on supports that change over the long run. Often, policy change or an educational program is needed, and media advocacy programs to influence the public and political agenda can be an effective complement to a social marketing program.

(7) Partnership

Social and health issues are often so complex that one organization on its own cannot make an impression. To really be effective you will probably need to team up with other organizations in the community. You need to figure out which organizations have similar goals to yours – not necessarily the same goals – and identify ways you can work together.

(8) Purse Strings

You will probably finance your social marketing programs through funds provided by sources such as foundations, governmental grants or donations. NGOs will probably work with you by providing in-kind contributions. The question is how to integrate your product into such campaigns without financiers and NGOs complaining about using public money to finance commercial initiatives. You must act thoughtfully and try to balance the different points of view with your own agenda.

Start your social marketing with a quick scan on the above-mentioned aspects. You will avoid a tendency to start generating and crafting messages or interventions before a deep understanding and insight into the customer is achieved. It also ensures that you immediately identify the behavioral changes you need to accomplish. Use the understanding and insights gained during a quick scan to select appropriate marketing methods and develop marketing plans (i.e. what will achieve and sustain the desired behavior). Initial insights also provide a baseline and starting point for measuring and evaluating interventions.

Further reading:
www.nsms.org.uk
www.social-marketing.com
http://en.wikipedia.org/wiki/Social_marketing

Business

In this section you prepare yourself setting up your business locally. You test and implement the different elements of setting up your business you formulated in Step II (Business section).

Setting up your local organization

During this step you have the opportunity to prepare yourself for starting up your business locally. During Step II you have made decisions on insourcing and outsourcing. During field testing you have to check if outsourcing is still an option, who will be the best partner, and how will it affect your business model and calculations.

You need local partners and advisors to set up your business locally. The best advice we can give you is: do not do it yourself.

Business support offices, Chambers of Commerce and local business consultants may advise you on the question of which legal entity is best suited to your needs and how to set it up. As in Step II, you have to investigate, find partners for and make decisions on the following topics:

- Startup team
- Organization
- Risks and mitigation strategies
- Distribution
- Network building and partnerships
- Realization schedule

Remember that these activities take much more time than expected. It can be very useful to plug into an existing organization or distribution network instead of doing it all yourself.

Startup team

Hiring local people to work in simple jobs is in most cases easy. Finding qualified and reliable management is difficult. You have to be sure local management fully supports your business strategy and it is important that your relationship with these people "clicks". It has proven to be successful when good incentives are in place for local managers to benefit from a successful business as well.

Some more tips:

- Use references by trusted parties to check the resumes of personnel.
- Check, double check and triple check your personnel on aspects like responsibility, reliability, trustworthiness, etc.
- Hire local people who live near your premises.
- Start small; with a large team on your payroll you will be visible for unities.
- Outsource all administrative and legal work.
- Hire, train and coach middle management.

Organization

In Step II we discussed the organization as the body of your business, consisting of:

- Facilities

  During Step III you have to visit the locations you selected in Step II and check whether they meet your expectations. For instance, two entrepreneurs involved in the Toolkit started using a location provided by one of their local partners. At a later stage, though, when you are scaling up your business, you will want or have to move to a location you rent yourself. When renting your own location, you definitely need a professional partner to advise you on real estate contracts, but for now you should avoid long-term contracts and look for a flexible "startup" location.

  As mentioned in Chapter 1, affordability (low cost products) is a critical aspect of appropriate technology and BOP strategies. It is important to investigate possibilities for local production and assembly of (parts of) your product. In Step I you calculated the cost price and refined this calculation during Step II. During the pilot phase you must break down your cost price and calculate each component again, assuming your product will be produced locally. Comparing this information, you can decide which part of the production you will outsource locally and which vital component will be manufactured in your "Western" home market, either by yourself or a by production partner (e.g. to protect your intellectual property).

  The next step is to specify the criteria for selecting different producers. Talk to them and make an initial selection of two or three possible production partners. Then ask these to provide you with indicative prices or, if possible, firm quotations. You need

this information to recalculate your cost price, forecasts, budgets, and credit need, and finally contract your local production partner.

- With respect to the sourcing of materials, we advise you to check aspects like availability, quality, reliability, and pricing while building a network of potential suppliers.
- Start thinking about quality control systems as well. This starts with setting the standards your suppliers will have to comply with.
- Perform cost and time studies on assembling and producing components, packaging, production, quality control, etc. This will give you a better understanding of reasonable local cost prices, whether or not you are producing your products yourself.
- Don't forget the after sales! If your product needs maintenance or simply breaks down you need to offer assistance. Include after sales in your product or service and make sure that spare parts are available locally at a reasonable price.
- When you have selected possible partners to work with, ask them to provide indicative prices or, if possible, concrete offers. You need this information in order to calculate your budgets, attract your funding and finally contract your partner.
- While you are demonstrating your product you have the unique possibility to show your product to possible partners. This works better than presenting your product on paper.
- It is not always easy to perform all research yourself. We recommend that you look for people with local experience, for example business consultants, and work with them while you are demonstrating your product.
- Always double check your information and make sure that your partners are able to deliver on their commitments. In some cultures it is an offence to respond negatively to requests.

Further reading:
Info Sheet 10: Sourcing strategies

- Human resources
  See "Startup team" in this section.

- Systems and compliance
  During Step III it is important to check two key aspects:

- Meeting legal requirements
- Complying with certification and regulation

Again, the best advice we can give you is: start early and do not do it yourself.

Business support offices, chambers of commerce, local business consultants, and local legal advisors may advise you on which legal requirements and certifications apply to your business. Because water and sanitation are health-related issues, government is in most cases highly involved in both topics. Because government structures are not always strong in developing markets, it may be difficult to understand how legislation and certification affect your business. Complying with

laws, regulations and certifications requires expertise, good contacts and patience. These processes take time.

- Financial management and control
  Executing a pilot is a project on its own and includes a lot of activities which have to be budgeted and controlled well.

- Because you are going to build a first or second prototype, you need a production partner who is going to provide you with calculations.
- If you do lab testing, you need to ask your knowledge partner to give a quotation on the R&D costs. It might be useful to have your product tested by an official government approved organization, as it can speed up the application process for permits or certifications. Take all these costs into account when drafting budgets.
- To pilot your product abroad, you must transport your prototype and import it. You need to budget for all the activities of the local pilot team, not only the technical research but the market research as well.
- We also advise you to budget for unexpected costs as case studies show that you need financial resources to perform all kinds of extra tests and activities during the field tests.
- You must identify all possibilities for lowering your cost price by shifting production and other activities to the local market. The field test will give you information for recalculating your forecast as well. It has proven to be critical to have a look at your assumptions on the overhead costs again.

Document this process well, because it can provide you with a scenario you can use in other pilots. Besides, subsidies granted to finance pilots often come with strict conditions on reporting on progress and costs.

> ***Lowering the cost price***
>
> One of the entrepreneurs involved in the preparation of this Toolkit decided to ask for quotations on moulds and spare parts locally and piloted local assembly of the product, which reduced assembly costs by 90%. He outsourced almost everything except one critical step in the production process, which secures the high quality of the product. However, he imported several spare parts abroad, which did not function at all, and it took a lot of time testing and developing the different prototypes.

Risks and mitigation strategies

During all the activities mentioned in Step III, keep your risk mitigation strategies in mind to keep you focused on solving critical issues which reduce your business risk.

- It is important to have a good grasp of the government structure and the policies, legislation and regulations relating to water and sanitation.
- Investigate your local market by talking to your clients directly and engage with local NGOs who have a good understanding of client needs and local water and sanitation issues.
- Take time to investigate the competition in the market, especially the possibility of unfair competition.

- Check whether all resources (both intangible, like knowledge about the market, and tangible, like spare parts, materials, labor) are available locally.

Distribution

When you are doing business in developing countries, distribution is one of the most difficult aspects. You will only be able to manage distribution yourself if you produce after receiving an order and your product is very complex and expensive (you will probably only sell a couple of products each year!). In all other cases you need partners. Present your business model to possible distributors you have in mind. Develop criteria for identifying candidates and work out a sound business proposal in which the added financial or (if an NGO is distributing your product) social value is clear to the distributor, who might become your partner.

In general, there are three ways of distributing your products:

- Distribution through commercial channels. You might investigate working together with multinationals that have an efficient distribution network in developing countries. You might also choose to sell your product to professional distributors or work with local agents.
- Distribution through government programs. Governments often spend a lot of money on water and sanitation programs. But it is not always easy to plug into these programs and it takes time to understand how these programs work (e.g. tendering procedures). On the other hand, being part of a program can have a huge impact on your sales.
- Distribution through NGO networks. NGOs often run large programs on water and sanitation. Because they are closely involved with the BOP market, they are able to reach your potential customer through their extensive networks. On the other hand, NGO decision-making processes are often time consuming and the policies and focus of NGOs may change from time to time.

During Step III entrepreneurs and organization often experience difficulty in reaching potential clients in rural areas (and even in urban slums). A good physical distribution network (roads, rail, etc.) is lacking and it is not easy to market products while potential clients do not have enough awareness of personal water and sanitation issues. Besides, it is not easy to build trust and confidence with potential end users of products. In Chapter 3 we give you some practical information on how to find clients in the Indian market. For now we conclude with some general tips:

- Start small and focus on a specific area and a specific client group.
- Use existing distribution channels.
- Visit places where your potential clients go, like markets, schools, public buildings, train stations, fairs, festivals, etc., and include these in your distribution model.
- Engage with women's self-help groups or small women's microfinance communities; they often have capacities to market and sell your product.
- Do not do it yourself. Work with trusted partners.

Further reading:
Attachment 6: Cannes Lions 2008

Network building and partnerships

Through the network of embassies, business support offices and local chambers of commerce, you can easily find local brokers and agents who can help you to do business in a developing country. It is important to find trusted partners, so checking for references is no luxury. The best way to ensure you are dealing with a good partner is to check with fellow entrepreneurs, trusted NGOs, representatives of your government and contacts with local branches of solid multinationals like banks or accountancy firms.

We refer to Chapter 3 in which we give practical information on how to build partnerships with NGOs, financiers and government in India.

Realization Schedule

Please refer to the paragraph "Financial management and control" (Step III). Executing a pilot is a project on its own. You have to take all the aspects described above into account. Draft a separate realization schedule to break down each activity into work packages, including a specific budget for each. Remember, doing business in developing countries takes much more time then expected as you are unfamiliar with the local customs, culture, procedures, etc.

Finance

In this section we emphasize the importance of attracting local financial means.

Finding local financial partners

During Step III, you have the opportunity to start meeting potential local financiers. Local funds and financial resources are highly important when your local activities are starting to grow and you want to scale up. There are six reasons for sourcing funds for local activities from local financiers:

- Your local activities cause cash flow in local currencies; financing your activities in the same currency eliminates your currency risk for these activities.
- Local investors understand the local business risks and may be more willing to provide capital at proper conditions.
- Western financiers are reluctant to put money into markets which are not familiar to them; they have problems estimating the risks and lack infrastructure to release and collect funds.
- Local investors might have local networks and local knowledge which can be valuable to your business.
- Bringing in foreign financial resources may be restricted by foreign capital restrictions imposed by governments.
- By expanding the range of different financiers, the business is less sensitive to a possible changing commitment by one of your financiers.

During this phase, the only way to get bank capital (like commercial bank loans) is by offering a bank a valuable security like a mortgage on real estate or a bank guarantee. The most common way to attract local capital is by asking your local pilot project partners for financial

support, plus their support in applying for local grants or subsidies. Local partners might have good contacts with possible (commercial) financiers; try to use their networks to get in touch with them.

Finally, you need to prepare yourself before talking to local financiers. You will need to present your business plan and, if possible, a good introduction by a reputable organization. We recommend that you read the finance section in Step IV, in which we explain more about near-equity ("mezzanine") finance and (commercial) loans. In Chapter 3 we provide a short list of some Indian financiers who have a minor or major focus on financing water and sanitation businesses. Finally, Info Sheet 11 briefly explains the phenomenon of microfinance and microcredits. In developing countries microfinance institutions (MFIs) play an important role in financing small-scale local businesses or activities in BOP markets.

Further reading:
Info Sheet 11: Microfinance and microcredit for water and sanitation

Kev deliverables

At the end of this section you have pilots in progress, giving you technical, commercial and financial information. If the information confirms the assumptions made in your business plan and you are ready to launch your product, your pilot has been successfully executed.

In most cases field testing is a “learning by doing” process and you have to adjust your product, sharpen your view on your market and figure out how to market your product, including setting your sales price.

If the outcome of your pilot does not support the business model you have in mind at all, you must reconsider your idea. It is better to change or quit your plans at this point than continue building a non-sustainable business.

You have also met many potential local partners and are ready to make decisions on the way you will set up your business locally. By now you have a complete business plan describing all aspects needed to launch your product and scale up your business.

Step IV: Going to market

To start with, you should realize that launching your product onto the market does not occur at a single moment in time. The process starts before the official launch, and does not end with it. It is influenced by market responses and initial orders and may be a complex process. In this fourth and final step, the focus is on the official market launch, getting feedback from the market and building a "real" business.

Steps	
Product	- continuous improvements
Market	- market introduction - market feedback
Business	- business systems - financial management and control
Finance	- near equity - loans
Key deliverables	- a profitable enterprise with potential to grow

In this section we explain the importance of continuous improvements on your product. On the other hand we advice you not to change too much as this will directly affect your cost base.

Continuous improvements

Now that your product has actually been launched, you should not change your product in any way for a certain period of time. First, collect market feedback from customers and, after some time, identify potential product improvements that respond to the feedback from your customers. These product improvements can make your product better, i.e. cheaper or more appealing to your customers. Once you have identified such product improvements, you can start thinking about introducing them. However, keep in mind that now that your product has been launched, modifications to the product will have more impact. You will have different product versions on the market which may require different spare parts, different servicing, different manuals, etc. It will increase the complexity of your business and affect your cost base.

Further reading:
Info Sheet 4: Product development, the case of the Basic Water Needs Foundation

It is up to you to decide how much attention you want to attract to your business at the market launch. Some businesses just slide into existence and start to offer their product. Others prefer to organize media attention and make a big event out of the market launch. If you are not sure about marketing yourself, ask for advice, perhaps from an NGO or local consultant. Your local partners can also play an important role. They often understand better than you the best local approach for product introductions on your selected market. However you choose to mark the launch, there is a moment when your product is actually on sale.

Market

In this section we present the Mytri case by Acumen fund, which comprises important lessons learnt when launching a water business. Spend time on collecting consumer feedback, which gives you the opportunity to improve your product.

Market introduction

One of the cases on the market introduction of an AT water product that has been extensively documented and made available is the Mytry case by Acumen Fund. This case is specifically interesting because not many BOP water and sanitation initiatives have been commercial for so long. This is then one of the few examples about which information has been made public for knowledge sharing purposes.

Further reading:
The Mytry case has been written up by the Stanford Business School and can be obtained for $6 via the Internet: www.gsb.stanford.edu

The Stanford business case

This case details some of the problems Mytry faced during their market launch. It is a case rich in information and gives a good insight into the operational aspects of starting up an AT water business. Even though the case focuses on the choices Acumen Fund, as an investor, was facing, it still illustrates the potential challenges you could face when starting up your AT water or sanitation business. Below we summarized the main challenges Mytry faced during their startup years. A very important choice in their case was to focus on (big) government and NGO orders. These were often delayed without prior warning and payment was always late, resulting in liquidity problems and very irregular ordering. This is surely something every AT water business will recognize. In the water sector there will always be an understandable tendency to go for government or NGO orders. These parties with large budgets to spend play an important role and they cannot be ignored. However, they do sometimes change their orders and tend to be late at paying their bills, and you will have to find a way of coping with this.

Some of the challenges Mytry faced:

- Inexperienced management
- Delayed equipment delivery
- Difficulty with expanding the dealer network
- Delays in setting up manufacturing
- Delays in orders from government
- Difficult communication between India and USA (financing partner)
- Inadequate data and information available for management
- Late payment by government and UNICEF (liquidity problems)

Exhibit 13: The Stanford business case

The problems faced by Mytry (see Exhibit 13: The Stanford business case) should be noted by others planning to enter the water and sanitation BOP market. We cannot go into potential solutions to the identified problems here, and neither does the Mytry case study offer solutions at this moment. However the case provides lessons learned and identifies potential pitfalls.

Collecting your own market feedback

Working with an NGO partner who is active in social marketing and/or PRA often provides the opportunity to learn more from the market than you would when using only conventional marketing techniques. When your NGO partners organize awareness raising sessions on the issues surrounding unsafe drinking water and lack of sanitation, you will have a natural opportunity to learn about their response to your product or about competitive offerings in the marketplace. This is a very worthwhile exercise to go through and your NGO partner will know how to help you.

If you are not working with NGO partners for social marketing then you should arrange to obtain market feedback yourself. You could either ask a market assessment agency to perform this study for you or actually do it yourself. Carrying out such a study yourself will take quite some time and will divert your attention away from operational issues, which at this time will be significant.

Business

In this section we introduce important systems and methods, which will help you to manage your business when it is scaling up. A complete overview on all systems and methods does not fit into the scope of this toolkit. We focus on two key aspects: Enterprise Resource Planning (ERP) and financial management and control.

Business systems

Particularly for high-volume products, you will need systems to manage and monitor your stocks, purchase your goods, control your cash flow and plan the resources involved in your operation. Larger enterprises use tailored Enterprise Resource Planning (ERP) systems, which are expensive and time-consuming to set up. Suppliers include Exact, MS Business Solutions and Oracle. It does not make much sense to install such a tailored ERP system when you are just starting up. But increasingly, affordable off-the-shelf ERP packages are becoming available for small and medium businesses to assist you in your operational control and planning. Small business software is easy to install and intended to grow with your business. If you face challenges with setting up an ERP system, you can always consult a local expert, which helps you to make an appropriate choice for your business.

Further reading:
http://download.microsoft.com
www.business.com

Financial management and control

Now that your business is up and running, your attention will switch to continuously improving your operation. You will want to improve your processes, so that you can increase productivity, reduce costs and make your business grow further.

Financial information is an important indicator of how well your business is running. Analyzing your financials gives you better insight into the way your strategy is working out, and you can adjust your forecast if needed or intervene directly on the operational side to improve your results. Financial information is like the gauges on the dashboard of a car.

The question now is to determine which financial information (indicators) reflect your business in a way that allows you to manage your activities effectively. Of course, this depends on the type of business. For example, if you are a manufacturer, investments in fixed assets are important, whereas if you are a trader, your focus should be on managing your stock level.

In answering this question, we recommend that you to take the following steps:

- Identify and quantify your financial goals.
- Identify and quantify the critical success factors that you have to manage.
- Develop a reporting format (you might want to use the templates you used to set up your financial forecasts).
- Set up a budget process leading to yearly budgets and financial forecasts.
- Formalize a reporting process with regular meetings in which financials are discussed, formalize responsibilities, and draw up action plans.

Financial goals

At the minimum, you need enough money to run your business the next day, week or month: "cash is king". The most sustainable source of cash flow is operational cash flow generated by your core business. Especially when your business is growing and you need to expand (e.g. invest money in stocks, machinery or trade debtors), operational cash flow might be insufficient to meet your credit need. You therefore need to manage your working capital and secure access to external financial means.

Examples of financial goals are:

- Targets on liquidity, meaning the ability to pay debts in the short run.
- Targets on solvency, meaning the ability to pay debts in the long run.
- Targets on profitability, meaning the ability to make profits and return on investments.
- Targets on bankability, to retain access to external capital (on attractive terms).

Managing your financial critical success factors

An important question is which items are driving your cash flow. In meeting above mentioned financial goals, cash flow is often a critical success factor. In general you can identify the following cash flow drivers:

- Turnover (or sales): volume times sale price. Focus on sales volume, especially of high margin products.
- Margin: turnover minus cost price. The margin (if possible allocated to different types of products) is a good indicator to focus on. Besides the volume of your sales, the margin reflects the efficiency of your production process or sourcing / buying power.
- Fixed cost base: overhead, depreciations, etc. The (fixed) cost base is often called "overhead", which has to be covered by your margin. Keeping your overhead at the lowest possible level is essential practice.
- Working capital: the sum of stocks and trade debtors minus trade creditors. In most cases, the outcome will be positive, which means you have to finance your working capital with own means or external funds (e.g. short-term credit lines). Your focus should be on keeping your working capital as low as possible by managing your stock and 'urging' your clients to pay in time (or much better: up front).
- Investments: the money you spend on purchasing assets. If your business is growing, you need to plan your investments carefully. The cash that is created by depreciations should be used to finance replacements. In most cases, expansion of your business will have to be financed by external funds, like leasing facilities or bank loans. Arranging these types of facilities takes time: you have to make investment

proposals, negotiate conditions and comply with loan and legal conditions before funds are available.

- Financial costs: interest, fees, currency results. In most cases the financial costs are a fraction of the total cost base, except when your business is leveraged with large debts or if you are financing your operation with “high inflation” currencies. Focus on attracting financial means in the same currency as your turnover and / or cost base is.

As we explained in Chapter 2, financiers check the health of their investments by monitoring financial results, which are often reflected in specific indicators like solvency rate and liquidity ratios. These indicators may be conditions in a loan or investment contract and are usually fixed at a specific level. You have to focus on managing these ratios so that the outcomes meet agreed levels or are in line with your financier’s expectations. This will enable you to retain access to financial sources on attractive terms.

Further reading:
Info Sheet 12: Business risks

Develop a reporting format

It is important to understand the differences between internal and external reports. External reports have to be delivered to comply with laws, regulations or credit facility agreements. Internal reports are used to manage the company’s activities internally. Although general standards do not exist, external reports are, in most cases, produced annually. The timing of internal reports depends on the topic you report on:

- Your sales, working capital and your bank account balance: weekly
- Your profit and loss: monthly
- Your profit and loss, balance sheet, cash flow and financial ratios: quarterly

In your monthly and/or quarterly (Q) reports you need to be able to compare your results with:

- The similar period last year (Q1 2008 against Q1 2007)
- The budget (Q1 2008 with Budget Q1 2008)

Each quarter you should revise your original annual budget to yield the latest forecast of your expected annual results. You can then compare this forecast to the original budget. At the end of the year, you should compare results with the business plan original forecast.

Reporting process, responsibilities and action plans

Don’t spend too much time calculating and analyzing your financials as this will not directly improve your business. You must transform your financial analysis into action plans. You need to formalize the reporting process and discuss outcomes on a regular base with your staff. You need to delegate responsibilities and formulate action plans to improve your business if needed. If you identify any problems, especially regarding your liquidities, immediate action will be required (lowering stocks, sending out invoices, calling debtors, talking to financiers).

Budget process and three-year forecasts

A couple of months before you close your accounts (year end) you should calculate your budget for the coming year to ensure it is ready before the beginning of the new business year. We recommend that you include a three-year forecast in this process. If you need extra financial means you will then have a three-year forecast ready to present to financiers.

Further reading:
http://en.wikipedia.org/wiki/Managerial_finance
http://en.wikipedia.org/wiki/Management_accounting

Finance

Recall that in the previous steps we discussed the first three of the following four types of financial means:

- Own means and informal capital
- Subsidies and grants
- Seed money and venture capital
- Near-equity and loans

It is now time to look at the last one: near-equity and loans.

Near-equity

Most financial sources in the previous steps relate to equity. As the word suggests, near-equity is an instrument positioned between equity and loans. It is used to finance high risk activities by using a loan. This loan has a high yield (its interest rate is above the market rate) and includes a warrant (an option to transfer (part of) the loan into equity under certain conditions). In return, near-equity is subordinate to loans. If a company cannot pay the interest in its loans and goes bankrupt, the assets are sold. The lenders then get their money back before the near-equity holders, who come before the equity holders. The activities of the ventures we talk about in this Toolkit are often not suitable to finance with common mainstream near-equity as they are too small in deal size; in other words, the size of the loan will be too small to cover transaction costs like due diligence. However, social venture capitalists often offer loans combined with a warrant to finance new ventures.

Loans

Generally you can say investors will provide financing when the business generates or will generate cash flow in the near future, from which they can get their money back. Of course, you cannot give them a 100% guarantee about the amount and timing of the return. Therefore, financiers providing a loan often ask you agree on specific loan conditions, divided into:

- Loan taking entity
- The term of the loan
- Security
- Financial ratios
- Other (soft) conditions

Loan taking entity

The loan taking entity, or borrower, is an important part of the credit agreement. Generally, the borrower is the legal entity that has a credit need which is financed by the lender, i.e. the corporation you have set up. Sometimes, lenders want other legal entities to sign the credit agreement as well, in case the credit facility is used by several other legal entities, or if other

legal entities can provide extra security. This may mean you need to co-sign the lending agreement on your personal assets.

Term of the loan

The term of the loan depends on the expected free cash flow, which can be used to repay the loan, and the type of asset which is financed. Real estate can be financed with long-term loans for up to 15 or sometimes 20 years. Machinery is financed either by leasing or mid-term loans up to 7 years. The credit need for investments in working capital (trade debtors and stock) is financed by factoring arrangements or working capital facilities (short-term credit facility). This type of facility is often uncommitted, which means these facilities can be terminated by the bank on a day's notice.

Security

Security is the assets which the lender can claim if interest payments are not made. If a bank finances your office, you normally provide them with a mortgage on the real estate. If a financier asks for another pledge or a personal guarantee, you provide them with additional security. It is common practice to provide additional security when you have just started up your business and are earning your first profits. The amount of security required depends on the business risk, the loan size, the value of the security and your talent in negotiating with financiers.

Sometimes the value of the security determines the size of the loan. We call this "loan to value", or in the case of working capital, "the borrowing base". Golden rules on the value of securities do not exist, but we would like to provide you with some *unofficial* "Dutch bank guidelines".

Asset	Security	Value	Coverage rate	Remarks
Cash	Pledge, often part of the banks general loan conditions	Nominal Value	100%	Depending on the currency
Public Shares	Pledge in accordance with banks standard documentation	Share price	70-90%	Depending on the type of shares
Real Estate	Notary Deed	Liquidation value	60%-80%	Depending on the marketability of the object
Trade debtors	Pledge in accordance with banks standard documentation	Current value (< 90 days)	60%-70%	Depending on the quality and average outstanding days
Stock	Pledge in accordance with banks standard documentation	Current value minus trade creditors	50%	Depending on the marketability of the stock
Machinery	Pledge in accordance with banks standard documentation	Current value minus defered payments	30%-40%	Depending on the marketability of the object
IPR	Pledge in accordance with banks standard documentation		0%	Soft security
Companies shares	Pledge in accordance with banks standard documentation		0%	Soft security

Financial ratios

Often financiers use financial ratios to monitor the risks on their investments. The range in which the value of ratios might fluctuate is often a condition in credit agreements.

Further reading:
Info Sheet 12: Business Risks

The ranges in which the value of ratios are set and agreed upon depend on your business's risk profile, the provided securities and the type of funds you have attracted. When

negotiating with financiers your goal should be to negotiate ratios at values you are comfortable with.

Other (soft) conditions

A loan agreement may also contain other conditions. These may be any kind of condition an investor wants to have in place to mitigate his credit risk. The most common conditions are:

- No further debt clause: the borrower cannot attract more loans without the approval of the lender.
- Change of ownership or management clause: the credit agreement can be reviewed by the lender when the ownership of the company (borrower) or (senior) management changes.
- No (further) pledge of assets clauses: the borrower is not allowed to pledge any or specific assets to third parties.
- First right to pledge (certain) assets clause: the lender has the right to pledge (certain or specific) assets on first demand.
- Dividend clauses: the borrower is restricted in transferring dividends out of the company.

We finish this section by giving you some tips when applying for a loan.

- Use a realistic or even worst-case scenario when you determine your capacity to pay back a loan.
- If you expect your credit need to fluctuate during the year, apply for a short-term credit line which gives you the possibility of drawing the amount needed to fulfill the credit need.
- Try to apply for a committed facility, which means the lender has the right to ask you to repay the loan only when stated conditions have been breached.
- Try to negotiate a pricing grid, which means that the interest rate decreases when financial ratios (and the risk profile) improve.
- In most cases professional lenders ask starting entrepreneurs to agree on an unlimited personal liability. Instead, try to negotiate a limited liability during a specific period (e.g. decreasing to zero in two to three years, depending on a ratio).
- It is important to realize that financiers in low-income countries (which often have less developed financial infrastructures) impose stricter conditions when they provide funds, and interest rates may differ significantly from developed financial markets.
- Make sure you match the currency and fixed interest rate period to your needs. To match currency, aim for lending in the same currency as your revenues. To find the optimal fixed interest rate period, you will probably need to ask for outside help from an expert (usually your bank, if you feel you trust them!).

Key deliverables

Congratulations! If you succeeded well your deliverable after Step IV is a business that is up and running. You have launched your product and built an organization to support your sales activities. You are ready to scale up your activities. During this process you will be able to manage all the resources you need to increase your sales activities. It is not the end of your journey; it is the beginning. You made a start. You did it!