

INTERVENTION
FRAMEWORK

EARLY STAGE BUSINESS FAILURE



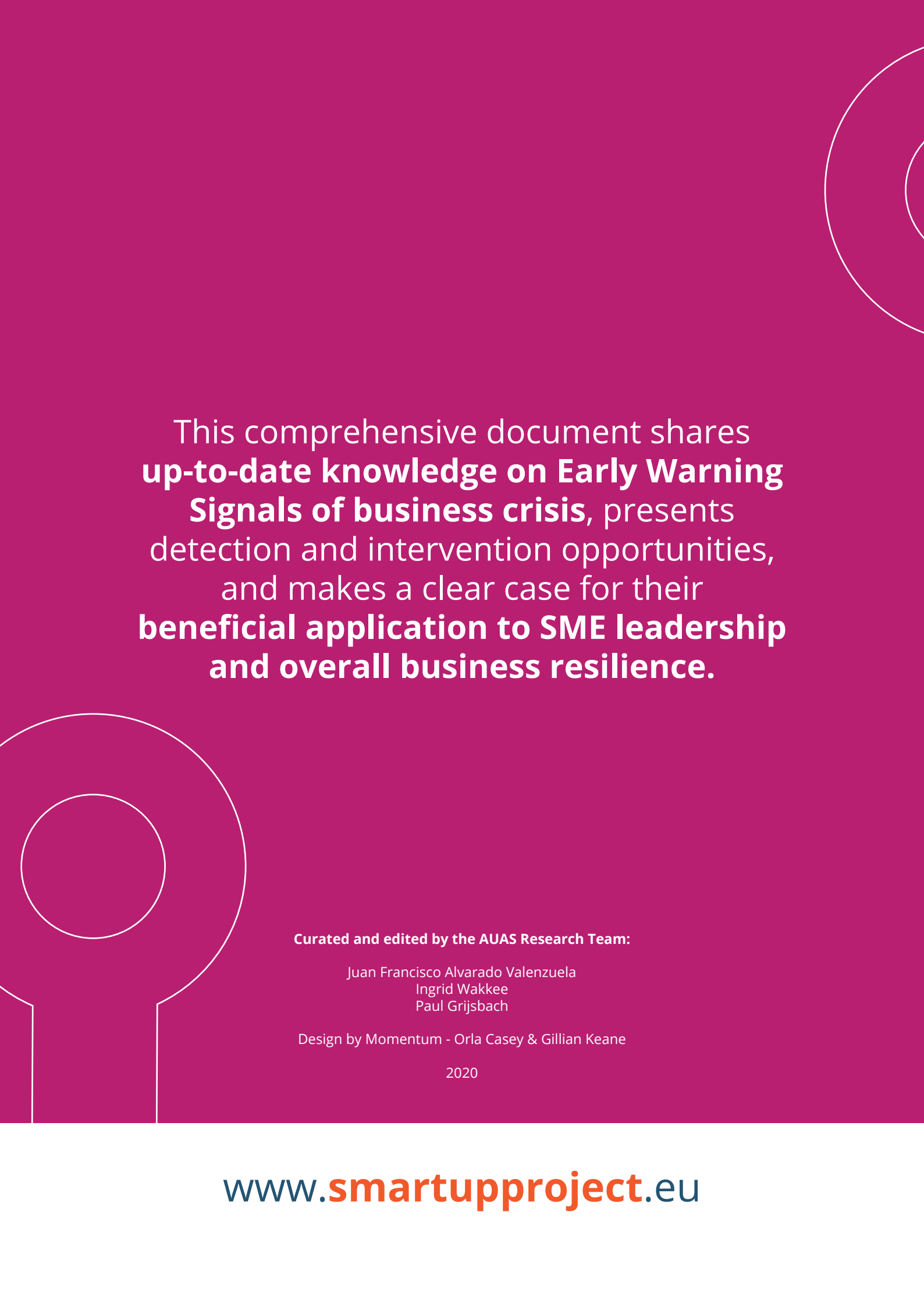
SMARTiUP

screening for business health



Erasmus+

This project has been
funded with support from
the European Commission



This comprehensive document shares **up-to-date knowledge on Early Warning Signals of business crisis**, presents detection and intervention opportunities, and makes a clear case for their **beneficial application to SME leadership and overall business resilience.**

Curated and edited by the AUAS Research Team:

Juan Francisco Alvarado Valenzuela
Ingrid Wakkee
Paul Grijsbach

Design by Momentum - Orla Casey & Gillian Keane

2020

www.smartupproject.eu

contents

01	Introduction to the SmartUp Framework	10
02	Executive Summary	14
03	Section 1 - What constitutes a business crisis?	18
04	Section 2 - Crisis in different stages of entrepreneurship	24
05	Section 3 – The personal situation of the entrepreneur	30
06	Section 4 - The Crisis Prevention Set	38
07	Section 5 – Monitoring of the Socio-Economic Context	42
08	Section 6 - Reducing The Impact Of Business Crisis	50
09	Examples of organisations that support SMEs in terms of Early Warnings Signal	56
10	References	64

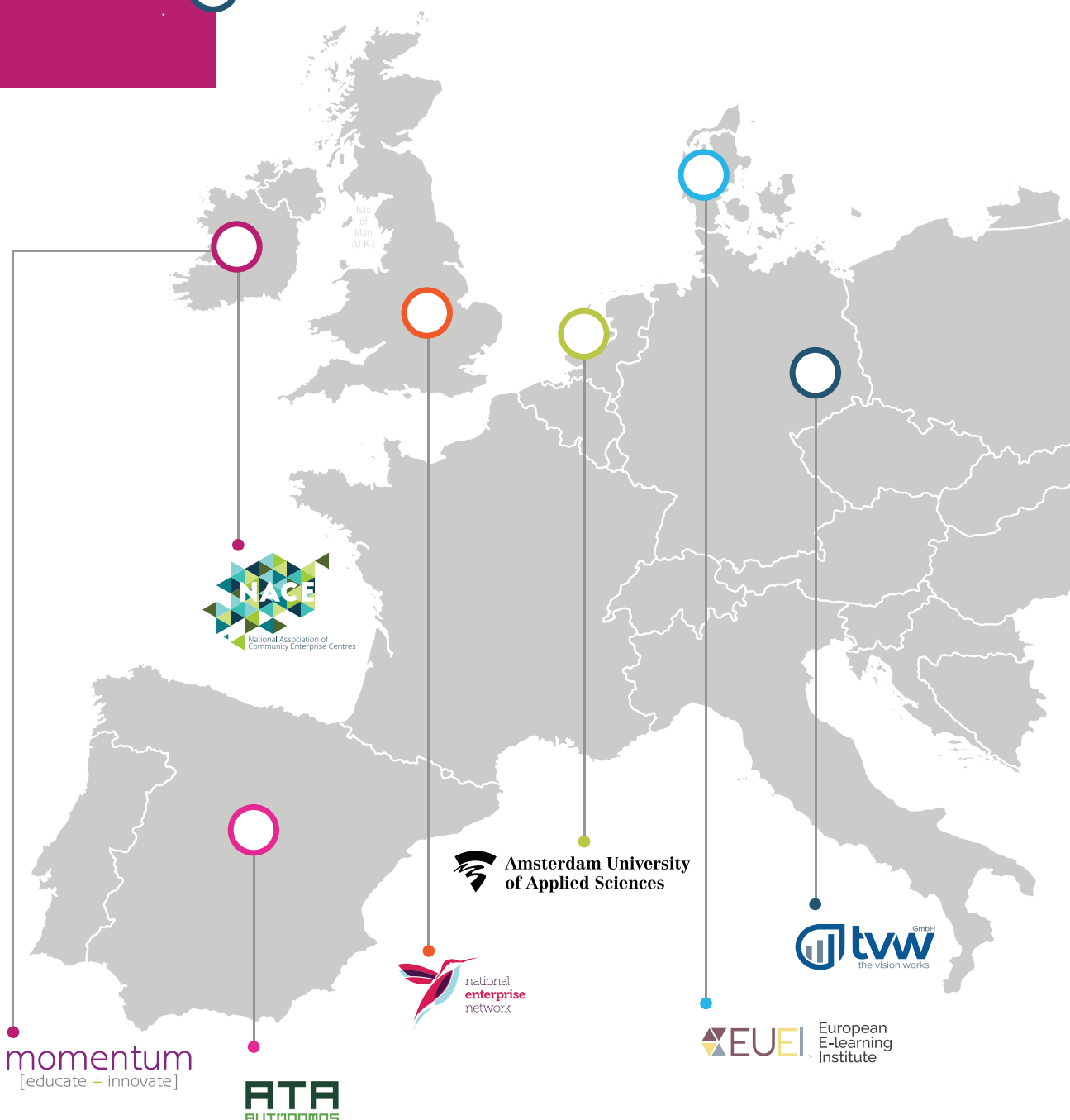


Co-funded by the
Erasmus+ Programme
of the European Union

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

This **SmartUp Framework** is a collaboration of the following **partners...**

-  National Enterprise Network, United Kingdom
-  Amsterdam University of Applied Sciences of Amsterdam, The Netherlands
-  European E-learning Institute, Denmark
-  Federación Nacional de Asociaciones de Empresarios y Trabajadores Autónomos, Spain
-  Momentum Marketing Services Limited, Ireland
National Association of Community Enterprise Centres, Ireland
-  TWV GmbH, Germany



Business failure is increasingly recognised as an important topic within enterprise education and for good reason: **more than half of European businesses will not survive past the 5-year mark**

Yet, failure is accepted by many as a normal feature of the macroeconomics and the focus is put strongly on helping entrepreneurs learn from failure, with a view to starting over from scratch. While important, this approach overlooks the huge economic, societal and personal consequences of business failure: entrepreneurs pay a high cost in lost investment and income, and in self-esteem and career trajectory, not to mention the knock-on effects of unemployment for others.

Specifically, SME business failure rates in Europe were almost back to pre-recession levels, but the Covid19 pandemic is challenging much of the European economy and bringing us to the brink of recession. Our knowledge of macroeconomic cycles instructs us to use this time to prepare for the next recession.

In addition, Brexit presents one of the most significant challenges to small businesses not only in the UK but to main trading partners within the EU: Germany, Netherlands, Ireland and Spain. For these reasons, it is more important than ever to provide emerging and established businesses with the skills needed to weather business turbulence.

OBJECTIVE

*Our project goal is clear: provide early stage entrepreneurs and established SME owner-managers with the knowledge and skills needed to **identify and interpret early warning signals of business crisis**, and to take timely, corrective actions, thereby facilitating growth, or survival, in unpredictable or adverse situations.*

ACTIVITIES & RESULTS

*The SmartUp Project consist of **three** main activities:*



01 EARLY STAGE INTERVENTION FRAMEWORK

This present document is the comprehensive but accessible digital framework that shares **up-to-date knowledge on Early Warning Signals of business crisis**, presents detection and intervention opportunities, and makes a clear case for their beneficial application to SME leadership and overall business resilience.



02 CURRICULUM + OPEN EDUCATIONAL RESOURCES – OERS.

Including a **curriculum, learning objectives, lesson plans, assessment guides**, and access to a variety of original **teaching content in digital format**, these free resources provide business advisors with a complete toolkit about early stage intervention for entrepreneurs to include in their business development programmes, either in classroom or in blended (digital) learning formats.



03 ONLINE COURSE

Based on the OERs, this training course is optimised for computers, tablets and smartphones. It **reinforces classroom teaching** and enable SME owner managers and entrepreneurs to develop and test their early stage identification and intervention tools.



BENEFICIARIES

Our main beneficiaries are early stage entrepreneurs and established SME owner-managers providing them with the knowledge and skills needed to identify and interpret early warning signals of business crisis, and to take timely, corrective actions, thereby facilitating growth, or survival, in unpredictable or adverse situations.

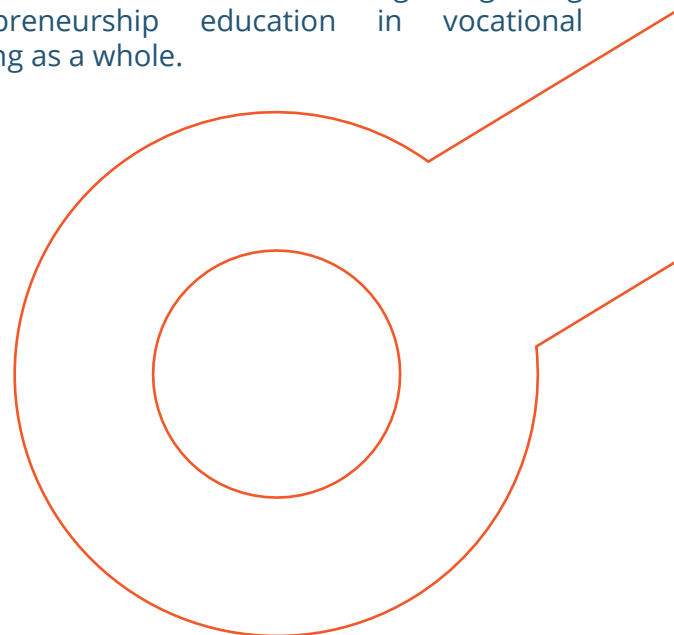
We will also work directly with a second target group: business advisors working in providers of vocational entrepreneurship education: enterprise support organisations, Chambers of Commerce, incubators, colleges etc.

A third key target group is policy makers who can mainstream provision and our partner organisations, as our mission effectiveness is directly related to the topic.

IMPACT

The overall impact is the increase in the number of advisors incorporating early stage warning signals of business crisis and intervention strategies to mitigate risk into their training programmes and becoming more digitally competent in using digital technologies.

By improving the knowledge and attitudes of business advisors we impact not only the effectiveness of entrepreneurship training to individual trainees and groups, but are able to create waves of change regarding entrepreneurship education in vocational training as a whole.



01

Introduction to the
SmartUp Framework





INTRODUCTION TO THE SMARTUP FRAMEWORK

The Framework contributes as a **guide of early warning signals of business crisis** with specific regard to SME's and enterprise education.

It is the first step and basis for the Curriculum and Online Modules that are developed within the SmartUp Project.

We proposes that vocational education is a way of ensuring strategic entrepreneurial skills built up in a preventive way. That is why we aim to provide trainers, business advisers, lecturers, and enterprise educators with a **compelling framework of topics which they can use for the early stage intervention in business failure/crisis.**

This **comprehensive Framework** has gathered knowledge on **financial and nonfinancial Early Warning Signals of business crisis**, and shows the strength of intervening in early stages to increase business resilience.

THE OBJECTIVES OF THIS FRAMEWORK ARE:

- 1** To provide the basis for the **early stage intervention curriculum**, and provide **introductory material** to be used as resources for online modules.
- 2** To **raise awareness** and **commitment to increasing educational** provision of the knowledge and skills needed to identify and interpret early warning signals of business crisis.

This document is intended to advise trainers, business advisors working in providers of vocational entrepreneurship education, enterprise support organisations, Chambers of Commerce, incubators, and colleagues from public, private and non-profit sectors.

To arrive at this Framework, several sources of information were utilised. We conducted a literature review on the early warning signals of business crisis, from where we point at gaps where enterprise education can play an important role.

In the following pages, the experience of entrepreneurs seen from different angles forms the structure of the framework: this system allows us to identify earlier the signals that are changing over different stages.

We begin with the definition of a business crisis, what is it and how can we distinguish it from the inherent risk present in entrepreneurship. We distinguish the elements that are needed for starter entrepreneurs, that could be different for mature companies.

We then touch upon the personal situations that can lead to entrepreneurial problems, and the way that dealing with individual problems are very much in the core of the way to deal with company developments.

We follow the identification of a business crisis with financial situations as the main symptom. Then, the relationship of the entrepreneur with the context. After, the action needed when intervention is on the way. And finally, the strategies to recover and learn from a business crisis.

READING TIPS



For a quick glance of the main contributions, please check the **Executive Summary** (page 14)



For a more elaborate explanation of the relevant factors in each stage, please visit the **corresponding section**



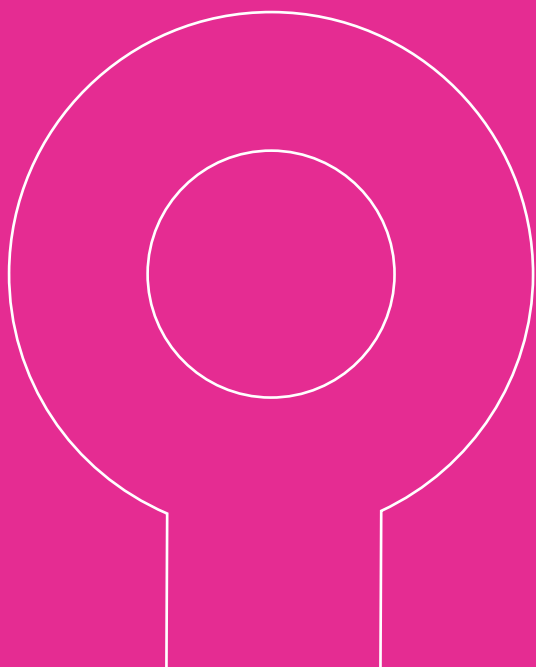
For inspiration on tools, methods and teaching materials, please check the **SmartUp Curriculum**

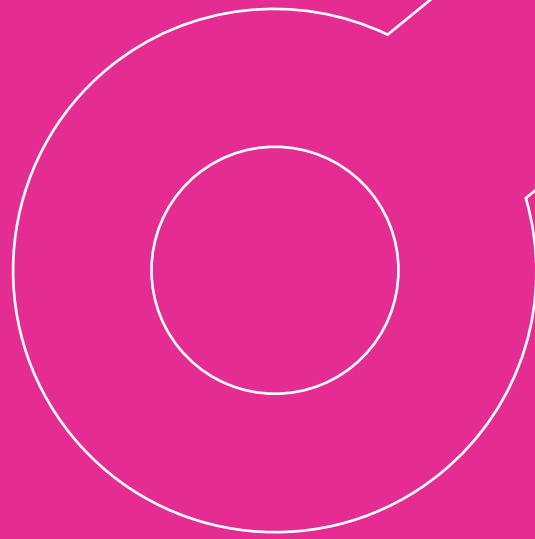


For **up-to-date development of scientific research**, we welcome inquiries by mail: j.f.alvarado.valenzuela@hva.nl. This way, we can exchange views and prepare businesses better for turbulent times

02

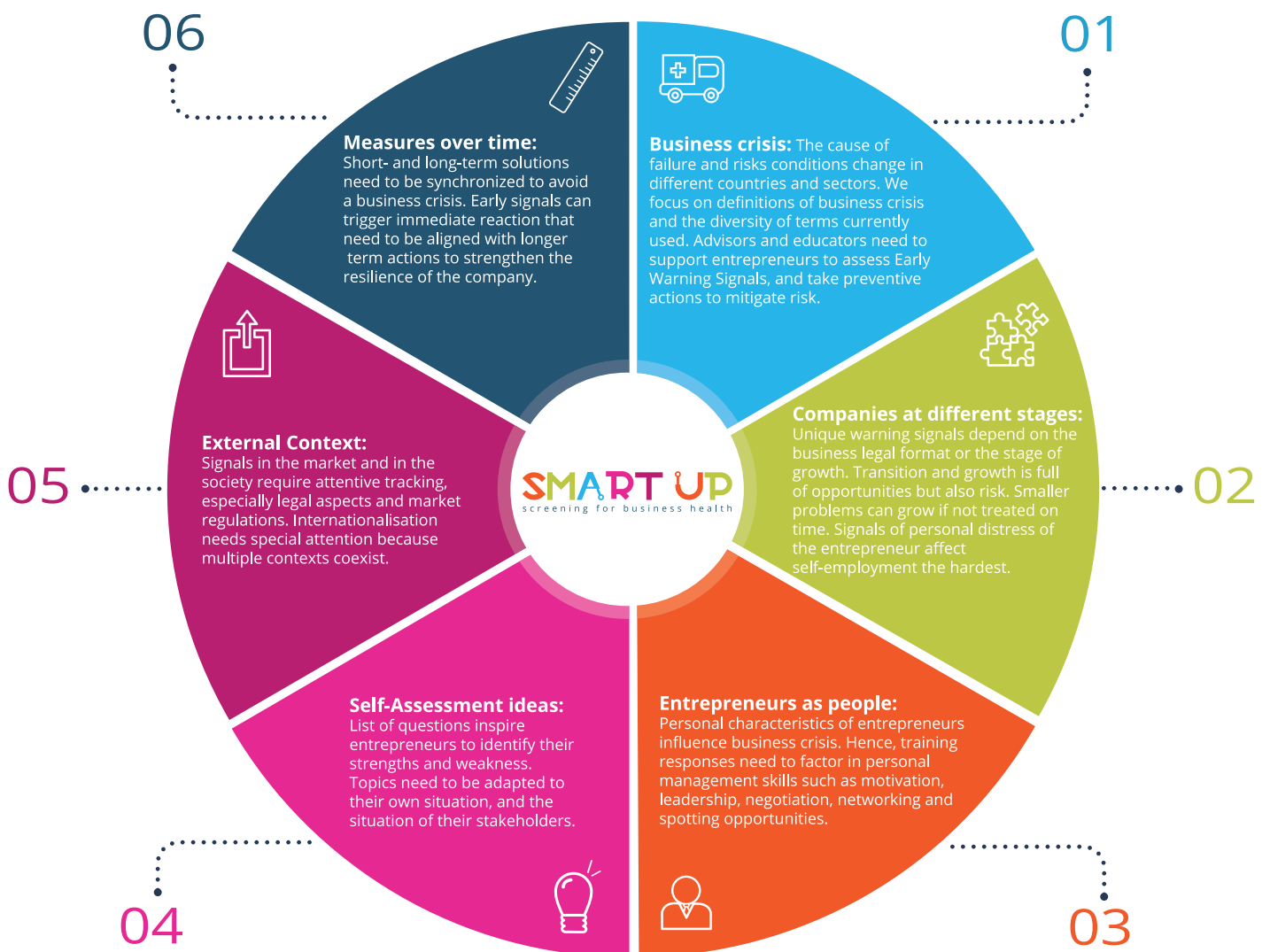
Executive
Summary





SmartUp Framework is a compilation of topics that are important for researchers and practitioners when looking at Early Warning Signals of a business crisis. These topics have been grouped into **six different sections**, and then recommendations have been drawn to contribute to the making of the curriculum and online modules.

EARLY STAGE BUSINESS FAILURE INTERVENTION FRAMEWORK





1ST SECTION

Is devoted to the definitions of **business crisis** and the diversity of terms currently used. Cases of failure and risk conditions can change in different countries and different sectors. We provide a definition of business crisis and the steps dealing to identify such an event. Advisors and educators need to support entrepreneurs to assess Early Warning Signals, identifying the thin line of risk that could lead to a better outcome or to failure.



2ND SECTION

Identifies the unique conditions for **companies in different stages**. Depending on the legal format that the company has or the stage of growth, then the root of the problems is different. Transition and growth come along with great opportunities, but smaller problems could also grow together if not treated beforehand. This includes issues at the personal level of the entrepreneur, notably in self-employment.



3RD SECTION

There is specific attention to the **personal characteristics of entrepreneurs** and their influence on the business crisis. Reports from organisations helping entrepreneurs in problems repeatedly mention the role of the owner in a business crisis. In that line, personal development involves professional training about managing a business but also to improve individual traits such as motivation, leadership, negotiation, networking and spotting opportunities.



4TH SECTION

Offers an extensive list of questions that could inspire **entrepreneurs to identify** themselves what their **strengths and weakness** are. Given the different realities of each company, a list of topics is very useful to adapt to their situation and the situation of their stakeholders.



5TH SECTION

Attention is given to **external signals** as a warning to be attentive, from events in the market to the society where businesses are active. Special attention is given to internationalisation because multiple contexts need to be taken into account. Of course, legal aspects and market regulations are addressed.



6TH SECTION

We bring together a series of observations on the **short and long-term solutions** that need to be synchronised to avoid a business crisis. Early signals can trigger an immediate reaction that needs to be aligned with consequences in the future that strengthen the resilience of the company.

In the annexes, there is a indicative list of organisations that support entrepreneurs in early warning signals from different countries, this list will be expanded as the project keeps growing.

03

Section 1 -
What constitutes a
business crisis?





SECTION 1 - WHAT CONSTITUTES A BUSINESS CRISIS?

A business crisis is reached when the situation has reached an **immediate threat to the existence of the company.**

Such circumstances may result from a **sudden event or evolve over a period time**; it may as well have both internal as external roots.

There are different labels to distinguish different types or stages of the crisis. For instance, Frère, Zureck, and Bensch (2019) use the labels **strategic crisis and earnings crisis, liquidity crisis and bankruptcy** to distinguish between escalating types of crisis.

Strategic crises refer to situations in which a firm loses the potential for success, leading to competitive disadvantages due to lack of strategic focus, lack of innovation or poor management while earning crises are those in which income streams are deteriorating resulting a reduction of the creditworthiness or increasing debt and situations, even though the firm might still be able to reorganise and overcome the crisis.

During liquidity crises, a firm has moved to situations where an acute lack liquid funds is restricting the scope for action. The state of bankruptcy – or insolvency - finally means the company can no longer overcome liquidity crises and will have to be terminated to pay of its debts.

Alternatively, Early Warning Europe¹ has designed a **classification** based on the **acuteness of a business crisis** as well as the required action:



HYSTERICAL

When the entrepreneur faces a problem that can be easily solved, but there is an overreaction. One example is the one-time tax affordable penalty. In that stage, only a first aid kit is needed when a consultant diagnoses and gives the right administrative or legal solution to solve the problem



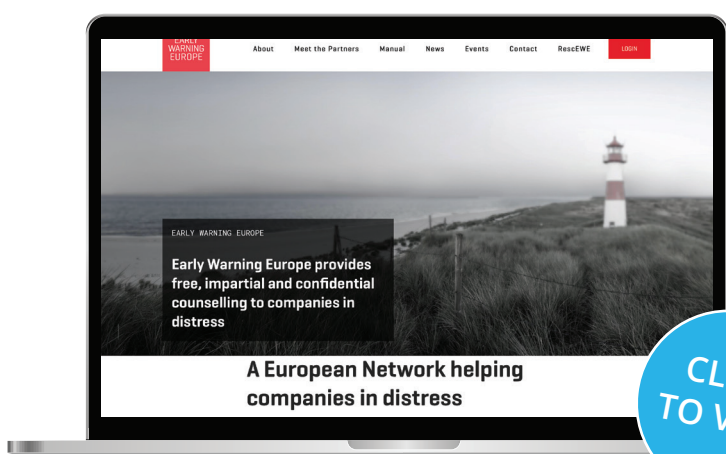
HOSPITAL

The consultants diagnose and identifies Early Warning Signals that could lead or show already a business in the middle of a crisis. In this stage, specialist advisors or mentor can provide with experience and tips to overcome the crisis and work together in a solution.



HOSPICE

To reduce the costs of failure. Some business can ask help when it is too late; the actions are focused on recovering the personal situation of the entrepreneurs and reducing as much as possible the damages and consequences of insolvency. Taking decisions quickly to avoid further loss is the key, and finding legal and administrative solutions to go through the process of insolvency.



Regardless of the labels being used:

Understanding what constitutes a business crisis, the fact that there **are different types or stages of crisis** and that **each requires a different response** is an initial piece that every entrepreneur or business advisor needs to identify before they can take appropriate action.

¹ for more information about this project, please visit: ww.earlywarningeurope.eu/

ORIGIN OF BUSINESS CRISIS

A business crisis can have different origins and entrepreneurs and business advisors need a good understanding of these concerning Early Warning Signals.

For instance, both 'misfortunes' and 'mistakes' may be at the origin of business failures (Cardon, Stevens, & Potter, 2011). These may be the result of or lead to 'internally and externally induced' failures (Zacharakis, Meyer, & DeCastro, 1999) which both may be 'preventable' or 'unpreventable'.

IDENTIFYING A BUSINESS CRISIS

We build upon existing projects focusing mostly on **financial signals and recovery and operate on a mentor/consultant-entrepreneur basis**, creating a volunteer mentor and consultants network and establishing protocols on how to **conduct their relation for helping entrepreneurs** in distress effectively and prevent failure.

EWE has developed a comprehensive intervention program to help entrepreneurs who are facing distress in different European countries. While distress is a subjective feeling EWE argues that objective criteria are also needed for better identification. The indicators that are used to accept companies in their program are the following five: turnover, liquidity, debt, company structure and management, and acuteness of the problems.

Financial indicators are not the only Early Warning Signals: even when the company is quite organised and healthy, the fact that entrepreneur seeks advice or help for situations like sickness, disagreements among the owners/managers, family problems when involved in the business, and external threats can be considered Early Warning Signals. Also, a business owner is near retirement age in a family business, but is yet to be confident about the future successor requires additional attention as this may constitute a warning signal.

The lack of confidence in the future and their state of mind rapidly starts to appear in a work environment and slightly in financial figures and client losses, as they often tend to unconsciously "kill the business" communicating to their non-family environment, mainly workers and clients, their doubts about its continuity. Business transfers need a clear and transparent legal process, to keep trust in all stakeholders, sometimes even including family mediation.

The role of prevention is different across these origins. For instance, an internally induced crisis could be the result of the sudden illness of the founder and the inability to keep running the company. Such illness cannot be prevented, and a replacement to run the company may take too long to adapt.

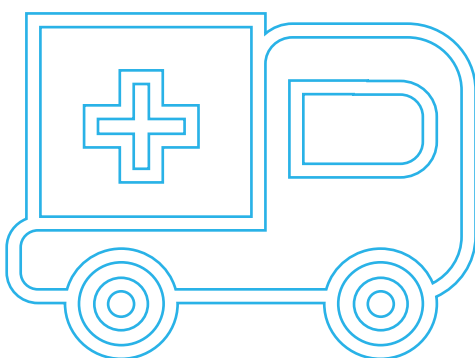
Another example of an internally induced crisis is the **high turnover of the personnel**; such a situation could be prevented by promoting practices in the company to keep the staff longer, offering higher wages or bonus.

A study about the existence of factors leading to insolvency shows factors that influence the resolution of the insolvency, such as the **indebtedness, the company's age, the duration of the state of insolvency, the company's legal form and the kind of procedure** (Alonso Mendez et al., 2017).

In that report, it is suggested that profiles of companies are created based on those parameters to provide better support for those with higher risk

CONTRIBUTION TO THE SMARTUP CURRICULUM

Based on the information that is needed **to identify a business crisis**, and taking into account the diversity of causes and conditions of business crisis, including the situation per country and region, we suggest that **the SmartUp curriculum develops content about business crisis** and how to identify it, specifically related to the capacity of entrepreneurs to assess and identify risk in their businesses.



04

Section 2 - Crisis in
different stages of
entrepreneurship





SECTION 2 - CRISIS IN DIFFERENT STAGES OF ENTREPRENEURSHIP

There are **differences between crisis and failure** in newly established ventures (start-ups) and established SME's. While the origins or causes for failure and crisis could be similar, **the main difference rests in the consequences for the future.**

SELF-EMPLOYMENT / INDEPENDENT ENTREPRENEURS

Self-employed or independent entrepreneurs constitute a significant group of entrepreneurs within Europe; with about one in ten Europeans registered as such. They work as independent business owners at their own risk and expense and do not have any employees and can be found across many different sectors. They include both highly skilled workers in creative industries such as writers and producers as well as in personal or professional services, i.e. hairdressers or bookkeepers and may operate under a variety of legal forms. The legal form of the business is essential to establish the liability of the entrepreneur in case of insolvency procedures.

According to Eurofund (2017), **five main types of self-employment can be distinguished in Europe**, according to the level of dependency on others, level of income and extent of non-paid work.



The Dutch organisation Divosa furthermore pointed out is considerable variation between independent entrepreneurs in terms of human capital and entrepreneurial drivers and ambition. Accordingly, they developed a set of six profiles ranging for example, from the 'talented-soloist' to the 'experienced visionair', and pointing out different risk factors and support approaches.

It has been shown that there is a group of factors in various stages that are key to determine the future of the company, and these are: Stage of **development, industry, size, profitability and belonging to a group** (Camacho et al., 2012). Based on those factors, companies that just start would need to pay special attention to other factors that mature companies have already solved, or larger companies need to take into consideration factors that are not important for self-employed.

Business crisis is usually coupled with periods of ups and downs that are inherent to the entrepreneurial paths; the measures to take in

various stages are vital to avoid the closure of a venture. Nuances in these descriptions are, of course, present in businesses. Initial goals of entrepreneurs can change over time, asking for flexibility and adaptation with new goals in mind. For example, some entrepreneurs are involved in (venture capital-backed) start-ups and who may relatively easily move on to the next entrepreneurial adventure.

Also, there are owner-managers of well-established SME's that goes through a crisis and suffers the (financial and emotional) effects much longer – even if the venture can survive the crisis.

For **self-employed entrepreneurs**, one of the most important early warning signals to take into account is the **loss of key customers** (Hill, n.d.) as they typically cater to a limited number of customers.

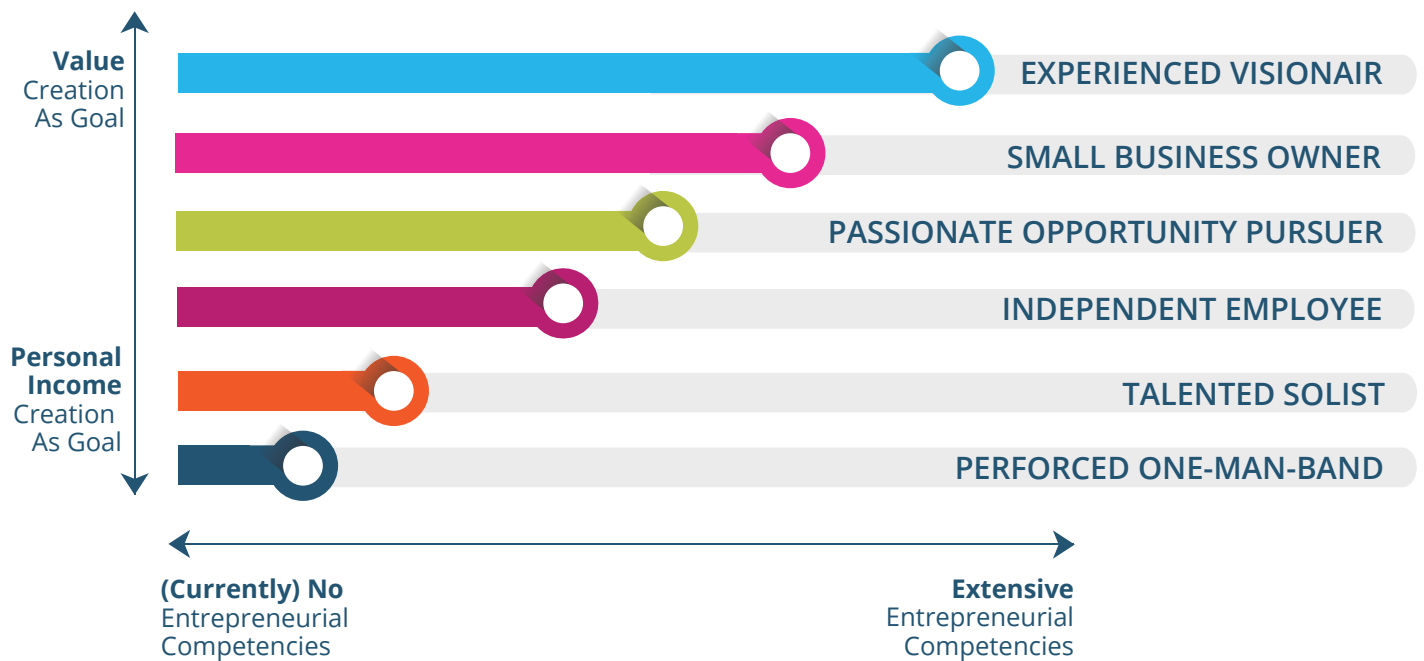


Figure 1 typology of independent entrepreneurs (source: Divosa, 2019)

This situation also applies to other types of entrepreneurs who are dependent on one or a few customers. Secondly, and due to the very nature of their (solo) operation, changes in their **personal situation** should always be considered with caution. Whether it concerns personal relationships, particularly marital crisis or illness of a spouse or children, personal-psychological challenges or addictions or misfortunes such as fire or burglary can distract such entrepreneurs from their business and be a starting point for cascading problems that could end up in a business crisis.

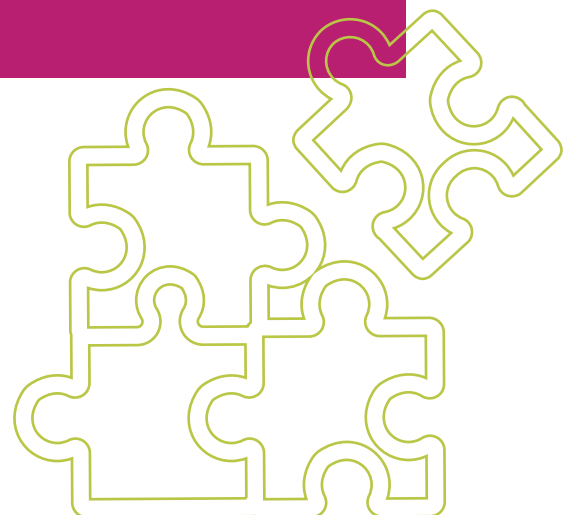
Another aspect to consider is the **collaboration with other professionals**. Solo entrepreneurs need as much advice and support as larger companies because one person cannot know it all. Not seeking professional advice or reduced involvement in network meetings should be considered a sign that their business could be vulnerable to sudden changes in the market (Nawaz, 2014).

A critical aspect of start-ups is the experience of the founders. Usually, the entrepreneurs are **younger and less experienced** and are trying out new ideas in the market

That is why the lack of experience in the management or founder team could be balanced by including advisors with more experience (Nawaz, 2014). Also, these type of companies are usually looking for new ways of business, and their curiosity could team with a lack of focus. Keeping track of goals and objectives is necessary to avoid a crisis in earlier stages, being flexible and adaptable to the changing context.

Also due to their liability of newness, and similar to independent entrepreneurs, start-ups are typically dependent on a limited number of customers, so when they fail to increase and or diversify their customer base, this should be considered a potentially dangerous warning signal. And when enough clients are found, the rise in customer complaints is a significant problem for new companies (Hill, n.d.).

Their reputation could be damaged, and it is therefore recommended to ensure the provision of quality to their customers and start building a loyal base to continue expanding instead of getting complaints that could lead to a crisis.



SCALE-UPS

For scaling companies, to have a **transparent cash flow is king** (Nawaz, 2014).

Companies that are in the process of growing can easily lose the grips of new investments or acquisitions, and advisors have found consistently that many of them face a cash deficit to pay internal costs (Begbies Traynor Group, 2020)

It is therefore essential to have a **good accountancy team or hire a trusted financial advisor** to support the scale-up in this critical phase. As an extra note, when inventors, researchers, scientific or technologists establish a company, then there is usually less experience in business management and other critical areas like commercial and marketing capacities. It is advisable to realise early the capabilities and limitations of the team, to hire external advisors or experienced managers when needed. Another factor to be vigilant is the turnover of employees, especially when it comes to key staff leaving (Begbies Traynor Group, 2020). Companies that are growing face change of plans and decisions that could lead for part of the team to be in agreement while another is not very happy with the situation.

There is usually a dependence on other's capital and decision-making that could cause troubles when growing. One important aspect is to have a good lead time for contracting with suppliers and contractors. Advisors have identified that growing companies often ignore that renewing or renegotiating major contracts coming to an end is the best way to continue the business and avoid crisis (Begbies Traynor Group, 2020). At the same time, there is pressure on strict timelines and achieving goals, and that is why paying attention to deals and contracts is of utmost importance. For example, when selling the company, there could be pressure from investors causing bad or rushed deals.

MATURE SME'S

Companies reaching maturity have been able to survive the difficult first years and have **enlarged their customer base enough to maintain themselves in the market**. Some countries aim to have as many mature SME's because of their benefit to provide employment, revenues and of course, their product or service.

Ireland, for example, has the national ambition to increase the survival rate of SMEs in the first five years by 25 per cent, but without mentioning early warning (Government of Ireland, 2018). The key for companies in this stage is to differentiate or prepare to die (Nawaz, 2014) because other companies will compete in the same sector. Already established business needs to keep up to the changes to avoid a crisis.

CONTRIBUTION TO THE SMARTUP CURRICULUM

Based on the critical stages of business establishment and their legal form, we suggest that the content of the curriculum is focused on finding **the source of the problems for each company, the root of the crisis**. The transition processes among those stages need to be strengthened as well as the proper identification of team strengths, opportunities and growth changes. Also, extra attention is required for a **balance of personal and professional affairs, especially in self-employment**.

05

Section 3 -
The personal situation
of the entrepreneur





SECTION 3 - THE PERSONAL SITUATION OF THE ENTREPRENEUR

The main decision-maker in taking preventive measures is the entrepreneur him/herself.

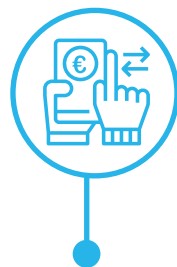
Hence this section explores features that are important when **looking at the root cause of the business crisis.**

Many entrepreneurs find it challenging to open up about their problems, and are reluctant to speak about their psychological state of mind or personal issues. Such data is not publicly available, but some initiatives have collected valuable information about the entrepreneurs themselves. The *AUAS Fenix Project*² collected stories from over 900 entrepreneurs where personal situations are always at the core of how to identify problems for their companies. Entrepreneurs advised students who interviewed them to help them and guide them in their work-life balance. Prominent tips arising were, to make agreements in writing and to ask for help and support in important decisions.

The *EU COSME Network for Early Warning*³ assessed over 3500 entrepreneurs in distress in four pilot countries (Poland, Italy, Greece and Spain). They identified that psychological and social aspects are very relevant in the process of bankruptcy. Some examples refer to depression, burnout, common issues as divorce, or sickness. These factors appear both as causes and consequences of bankruptcy.

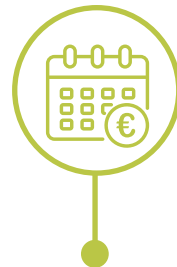
For entrepreneurs, there are challenges where professional services beyond the usual business advisors are sometimes required. The support of health and wellbeing professionals can be at the core of solving personal situations that could lead to a business crisis. A network of collaboration between business advisors and health and wellbeing professionals would be an ideal situation to prevent business failure. As an example, the research team of AUAS shared some tips with a Dutch National Foundation for Suicide Prevention as they are (too) often contacted by entrepreneurs in distress but do not yet know how to talk to them in their "own language".

Moving forward, there are specific features for entrepreneurs of small and medium enterprises that need **collaboration with accountants, financial advisors and business developers advisors** and include the following:



Identification by bank transactions

(Lang & Schmidt 2015)



Yearly financial indicators

(Lang & Schmidt 2015)



Comparison with the competition

(Bisson & Dinner, 2007)

*The role of advisors is then to help the entrepreneur to make the needed changes to **prevent or solve a business crisis.***

KNOWLEDGE AND/OR EXPERIENCE IN BUSINESS

A critical factor for entrepreneurs is to **gather knowledge and experience** in starting and running a business. This can be acquired through formal training, but it can also be a combination of training with practice. Articles in magazines in the field of entrepreneurship put a lot of emphasis on tips that entrepreneurs can use to change their behaviour and the behaviour of their companies.

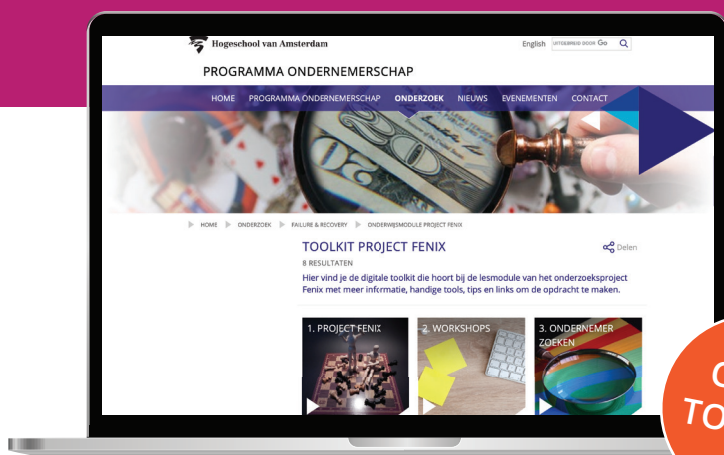
One known term is to be **“able to pivot”** (Luenendonk, 2014), which means to find alternatives solutions when things do not go as planned. In other words, be flexible.

Another important aspect is to be able to **understand the basics of SME finances and their financial situation**. NACEC and Momentum in Ireland have found that SMEs do not realise they are in trouble until it is too late, and most of the time, the reason behind is financial illiteracy and lack of analytical skills.

The key for entrepreneurs is to **increase their knowledge with strong financial foundations** for them to interpret the numbers of their companies, examples of study cases of SME's would be beneficial to illustrate this requirement.

One last aspect is the **identification of strengths regarding the knowledge or experience of the entrepreneur(s) and of the employees**. It is useful to identify the person who can fulfil the best role in the company, and also to have a back-up plan if that person is no longer involved in the entrepreneurial journey.

The database from Fenix Project also shows that fights between founding partners or within key staff is at the core of a business crisis.



- ² More information about this project is found in Dutch in the website: www.hva.nl/toolkitfenix
For English general descriptions, the site of the research project of AUAS Failure and Recovery is available.
- ³ More information about this initiative is found here: <https://ec.europa.eu/easme/en/cosme-0>

As we highlighted earlier, **psychological issues** can rapidly turn a healthy business into a business crisis and insolvency.

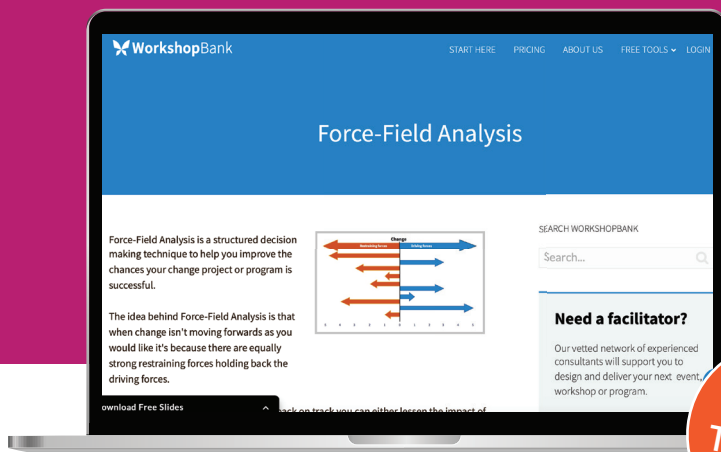
Think of **depression, burnouts, or trauma** as examples. As it pointed out, these indicators are not shown in accountability and number at the early stages of the business. They are only identified when tracing back the origin of problems of companies already in distress.

Momentum in Ireland advises that psychological aspects needed to support leadership traits are much needed at times of business challenges. The **most important aspects include communication and negotiation.**

This advice has also been shared by the entrepreneurs who took part in the Fenix Project, suggesting that being able to **agree on terms with others and keeping the promises** have helped the entrepreneurs to overcome the business crisis and being helped by people around them.

One concept that helps to understand the complexity of change when taking into account other people is the *Force-Field analysis*⁴.

The main point is that every change needs to integrate forces to solve possible problems, but some forces prevent those solutions to be implemented.

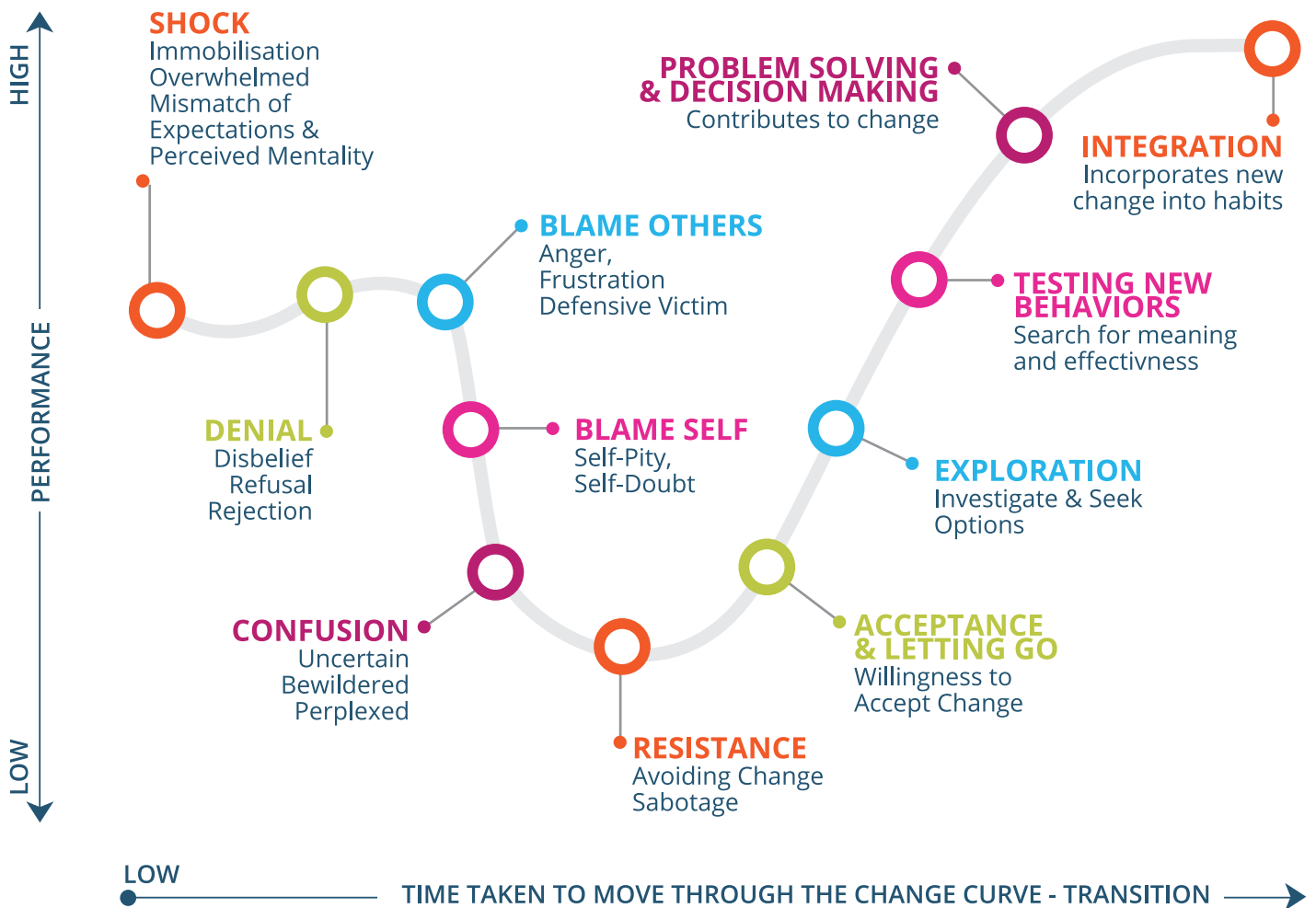


CLICK
TO VISIT

⁴ This website provides extensive information about this method: <https://workshopbank.com/force-field-analysis>

The following figure shows the change curve from an individual:

Source: The Force-Field website, 2020



The Entrepreneurial Competencies Framework from the European Commission proposes that there are **different levels where entrepreneurial competencies can be strengthened.**

Their user guide (McCallum, 2018) recommends the use of **three primary competencies: creativity, working with others and mobilising resources** as the core and specific competences such as financial literacy and resilience being part of these.

While these competencies are typically linked to either starting a business or acting entrepreneurially as a professional (e.g. in the context of intrapreneurship), they seem particularly relevant in the face of a business crisis. For instance, when times are challenging, financial literacy is of critical importance but so is being able to cooperate and scanning the environment for new opportunities.

Preventing business crisis can learn from the development of competences, and the resilience built during the crisis can later be reapplied in a fast recovery or the restart of a new venture after the crisis. However thus far “being able to recognise Early Warning Signals” as such is not yet part of the Entrecomp Framework, which may be an omission.

Given that the **Entrepreneurial Competencies Framework** has begun to be used in **educational programmes**, there is a need to create links with the **modules on early warning and the competences.**



Figure 3: EntreComp Visual Representation of competences

The following case assisted under the **Early Warning programme in Madrid** is a clear example of the complexity of psychological aspects in entrepreneurship.

Two sons made contact because their father's business, a dental clinic, was losing clients and was returning very little profit in the past six months. Their father could not explain to his family why this was happening. Family mediation was needed to allow access to the business bank accounts and the financial transactions of the business. After analysis by a financial mentor, it was revealed that he was asking his clients to advance payments for buying materials and products for the treatments.

That money was going out of the business accounts, but no records were in place for purchasing the materials for the treatments. Not only were purchases delayed, so too were the client's treatments. Faced with clear financial information, the owner confessed to his family that he had a gambling addiction and needed help. He was asking for personal loans and using revolving credit cards to buy the materials and products and compensate the personal expending of the advance payments from his clients, and when he could not afford paying the loans and, he started to delay the treatments as he did not have any money to buy the material.

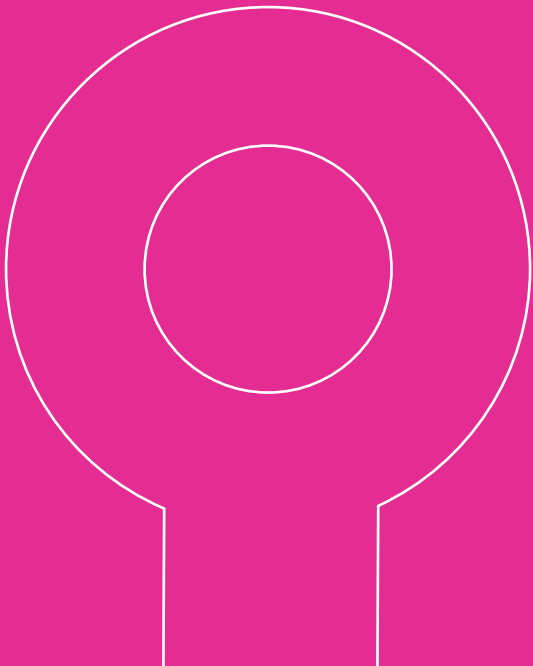
He asked for sickness leave to follow a public program to treat his addiction, one of the sons undertook the dental clinic in the meantime and hire a dentist. An agreement with their bank was found in the form of a mortgage on the clinic in affordable payment conditions and interests to pay his father's debts and launch a marketing campaign to recover clients, after six months the clinic returned to growth. Now the father and son manage the business together.

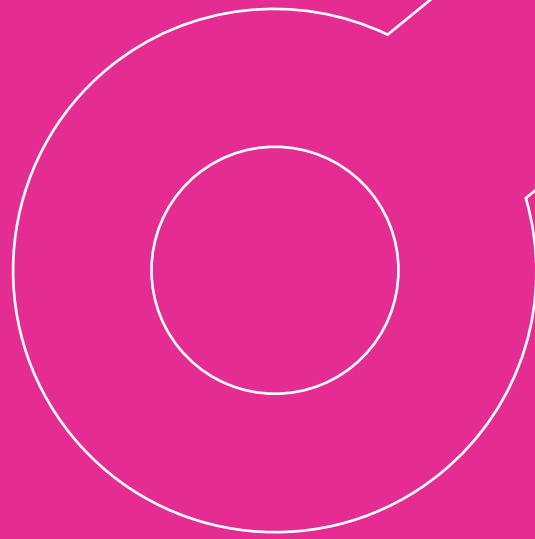
CONTRIBUTION TO THE SMARTUP CURRICULUM

Based on the personal characteristics needed to identify and manage a business crisis, we suggest that the curriculum develops content for the **personal development of the entrepreneur him/herself**. The main aspects would be **psychological wellbeing, motivation, leadership, negotiation, networking and spotting opportunities**.

06

Section 4 - The Crisis
Prevention Set





SECTION 4 - THE CRISIS PREVENTION SET

Combining the personal situation of the entrepreneur with the business indicators, it is essential to look at **combining early signals into a simple diagnosis.**

Once a diagnosis can be made, the entrepreneur can decide where and with whom to look for further advice and acquire the strategies and tools to strengthen the capacities of their company to prevent a crisis.

INSPIRATION FOR CREATING SELF-ASSESSMENT TOOLS

The *Ludwig-Fröhler-Institut (2001) in Germany* has developed a short questionnaire consisting of 14 questions to be answered with a scale from never to always, that should help **SME's to maintain insight into their general business health.** The more confirmative questions that can be responded, the less likely the onset of a business crisis will be.

- 01 Are you always aware of how your business is doing?
- 02 Do you calculate based on actual operating costs?
- 03 Is your situation of sales better compared to the previous year?
- 04 Do you do market research regularly?
- 05 Are the causes of the migration of (regular) customers known to competitors?
- 06 Do you have a sufficiently large customer base?
- 07 Do you attach great importance to the appearance of your company?
- 08 Do you know if your employees are sufficiently motivated?
- 09 Does every employee know their tasks & responsibilities as well as those of their colleagues?
- 10 Are you training your skills in business management?
- 11 Do you have a working dunning system? Do you monitor your clients' solvency?
- 12 Is your solvency always guaranteed?
- 13 Is every investment coordinated with the financing plan?
- 14 Are your private withdrawals always coordinated with the operating result (profit/loss)?

These indicators are in line with the **ten guidelines for the prevention of crisis in business** ventures that Fischer and Hose (2019) point to.

They say that the knowledge economy requires entrepreneurs to focus on sustainability and long term viability by considering what is happening in the internal organisation and also what is going on in the value or impact chain in which their organisation is embedded. Specifically, they point to the need for companies to consider the following:

- 01 Support of controlling through scenario management
- 02 Integration of HR, controlling and marketing in the strategy
- 03 Building a high-performance organisation - robust and flexible at the same time
- 04 Professionalisation of management processes and auditing of Management performance
- 05 Consideration of the "digital revolution" for Industry 4.0
- 06 Use of standards and benchmarks for internal and external comparisons including early risk detection systems and business intelligence
- 07 Encounter complexity through networked thinking and holistic Systems
- 08 Creation of knowledge balance sheets to represent soft factors and value chains internally and externally (dependencies), in particular also towards investors
- 09 Creation of crisis management plans and business continuity program
- 10 Promotion of an identity and meaningful corporate culture

Many of the questions raise questions for entrepreneurs and advisors who are not familiar with some terminology, if many of the topics are not known then it is a good indicator to call for professional help of an advisor and learn more. To finish this section, the project about **Early Actions in Debt Problems** (Van Teeffelen, 2019) emphasises that risk is to be included in every management mindset.

Their ongoing research shows (so far) that business debts are better prevented when payments to providers are agreed to be spread over time, that acquisition for some resources is in smaller tranches and the diversity of products offered is slightly enlarged. This way, SME's can cope better with higher risks and with their capacity to pay their debts on time.

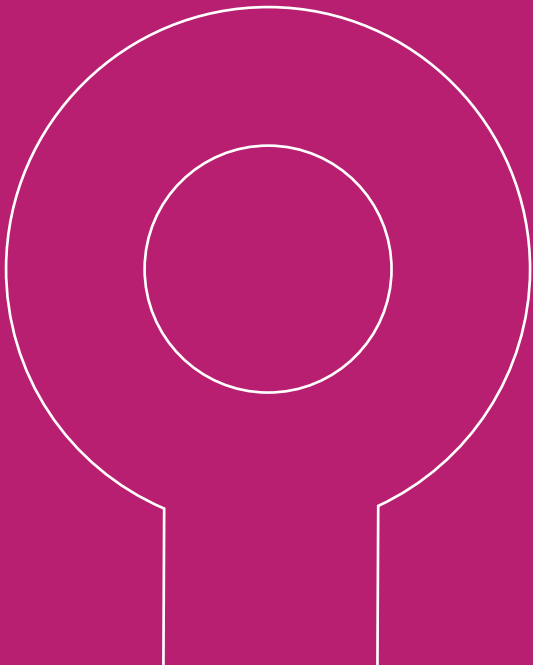
CONTRIBUTION TO THE SMARTUP CURRICULUM

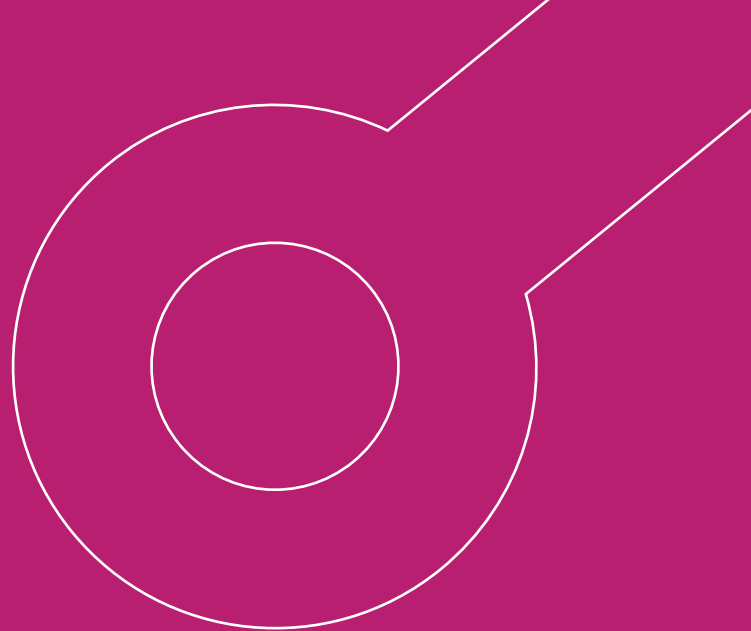
We suggest that content in the curriculum is developed to allow **business owners to assess their own companies**. A system of checklist can help each entrepreneur to add **aspects that are adapted to the reality of each company**. Different countries and sectors would require that those tests are adapted to their situation, and different stakeholders can contribute with their different expertise.



07

Section 5 -
Monitoring of the
Socio-Economic Context





SECTION 5 - MONITORING OF THE SOCIO-ECONOMIC CONTEXT

Early warning signals are also to be found in the **socio-economic context where companies are trading**. While many of these trends can now be seen through technological monitoring, not all entrepreneurs are able to afford those tools nor they do not have the time to keep an eye on all of them.

EXPERTISE FROM EXTERNAL ADVISORS

Not surprisingly, the knowledge and expertise of the entrepreneur is not enough to keep an eye on all the information that is out there.

There is insufficient time and capacity to run a business and still be able to devote sufficient time gathering information to analyse. That is why the **use of social networks and informal contacts provides valuable clues that can be interpreted to prevent business crisis**.

Another way is also to **delegate internal and external advisors to keep an eye on the trends** that are happening in the social, political and economic environment where the business is active.

For example, **business intelligence monitoring** includes the analysis of quantitative data such as the trends per country, the statistics of the market needs per regions or the identification of global and local actors per sales volume and sectors.

A more qualitative approach is to monitor with social listening and customer feedback loops, such approach allows to know the priorities of the customers, the change of preferences, the differentiation with the competitions and the opportunities to innovate.



Here there is a **list of indicators** that can be found internally in the company and that provides **clues about the situation in the market**:

01

Key Marketing & Logistic Indicators:

Periodic reports of sales, fixed and variable costs provides an idea of changes in the customers behaviour

02

Liquidity & Financial Administration:

With the collaboration with the accountant and/or financial advisors there is an overview of debt collection and financial restructuring

03

Stakeholder Signals:

The features that are required in the company staff (human resources), the profile that is available in the labour market and the profile for the management team

04

Strategy Signals:

Set limits about what is affordable to loose

05

Monitoring Routines:

Find out the expertise in the company and what is required from external professionals

Zobel and Gellert (2016) propose that **companies should monitor the risk profiles of the countries in which they are active**. They have developed the BERI model to assess these risk profiles based on an extensive number of criteria ranging from political stability and salary ranges

Following a logic of the BCG matrix, they continue to group countries based on financial indicators and the BERI indicator into a two-by-two matrix to determine both the risks of the specific investment as well as the overall portfolio risks.

To identify the place of the SME in this international chain is beneficial to keep an eye on the evolution of international business, because the evolution of those markets will certainly affect the smaller companies sooner or later.

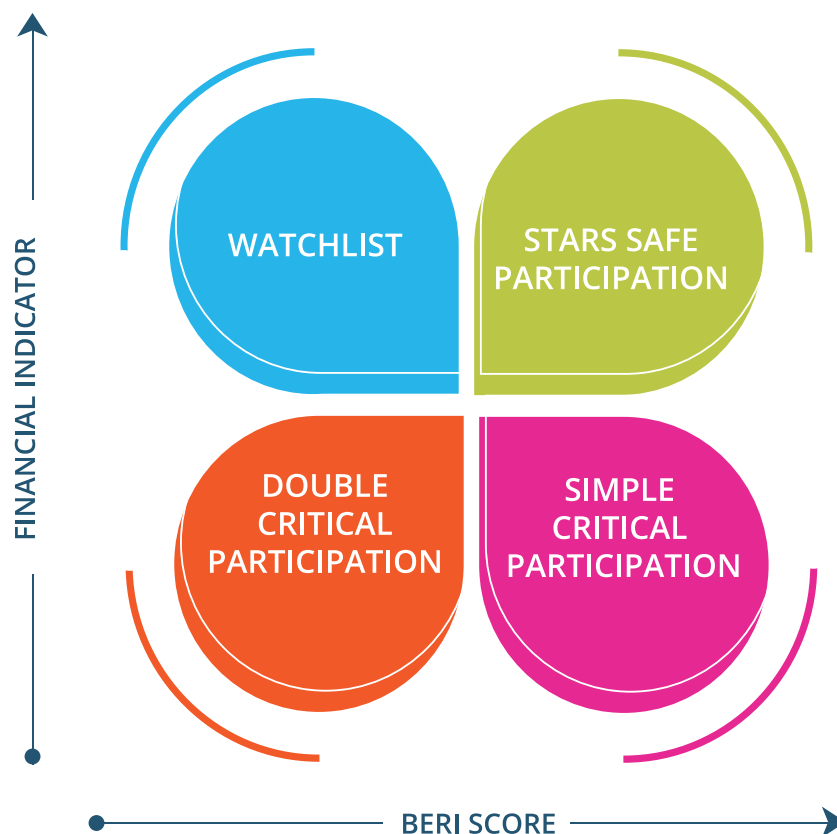


Figure 4: Investment portfolio matrix from Krupp 2000 (in Zobel & Gellert, 2016, p. 21)

According to *Bürkle and Hoffmann (2019)*, early warning signals that require a strategy correction are often disregarded, and that is why strategy crisis is followed by the deterioration in earnings due to decline in sales and / or an increase in costs.

Here a summary of the endogenous factors (within the company) and the exogenous (outside in the market) that are at the core of a strategy crisis.

The latent ones are commonly present and need to be systematically monitored, while the acute are usually unexpected and difficult to remedy.

	ENDOGENOUS	EXOGENEOUS
LATENT	<ul style="list-style-type: none"> No systematic collection of environmental data Lack of adaptability Missing strategic Controlling Lack of corporate strategy and planning 	<ul style="list-style-type: none"> Contractive macroeconomic development Uncertain political Framework Shortage of raw material reserves Change in buying behaviour of customers
ACUTE	<ul style="list-style-type: none"> Management overwhelmed termination of persons in key positions Lack of successor products 	<ul style="list-style-type: none"> Declining purchasing power Image/ reputation loss Loss of important suppliers or customers Lack of acceptance of the products in the market

Table 1: Indicators of strategy crisis (Bürkle & Hoffmann, 2019, p. 104)

Also, when looking at **financial indicators**, the existing crisis can be determined by the (exemplary) factors which can either be **induced internally or externally**.

	INTERNALLY INDUCED	EXTERNALLY INDUCED
SALE REDUCTION	Quality problems	Competition
	Missing product properties	Stagnation market
	Out of stock situations or mismatch inventory	Change in buyer behaviour
	Excessive overheads	
INCREASE IN COSTS	Personnel costs	Procurement market
	High staff turnover	Exchange rates
	Unexpected malfunctions (recalls)	Collective agreements
	Poor departmental communication	Legal changes

Table 2: Financial indicators of crisis (Bürkle & Hoffmann, 2019, p. 105)

UNFORESEEN EVENTS

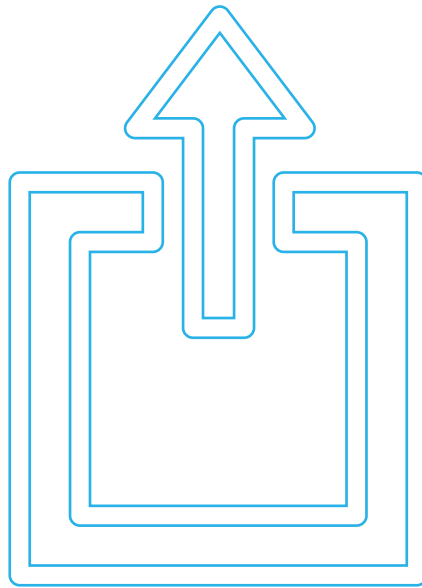
As the recent development around COVID-19 demonstrates, unforeseen events can suddenly disrupt business to a significant extent.

While it is hard to prepare for such situations, it does show that making sure there is a bridging fund available to help tie the entrepreneur over in case activity stalls for some time.

Also, the COVID-19 situation illustrates the importance of being flexible and being able to move into different markets as such performing regular stress tests should be a core part of any entrepreneur's repertoire.

In the experience of advisors, regulatory frameworks have to be taken into account.

In the experience of advisors, regulatory frameworks have to be taken into account. Across many sectors, providing services and goods are dependent on the regulatory changes that are occurring at a national and EU level, but also at the international level. For example, a consultancy firm based on compliance with the present regulatory Framework on Personal Data Protection could be at risk with data leaks or with sudden changes in the near future. It is of utmost importance to look closely at national legislations and their consequences for businesses.



CONTRIBUTION TO THE SMARTUP CURRICULUM

Based on the context where the business is operational, we suggest that the content of the curriculum addresses the **monitoring of market trends and the identification of external factors of risk**. In the context of new and upcoming business opportunities where ideas can be translated into products and services, those contexts need to be monitored **to adapt the company to the changing needs of the clients, to the regulations arising and to collaboration with suppliers.**

08

Section 6 -
Reducing The Impact Of
Business Crisis





SHORT-TERM REACTIONS

The identification of a business crisis in early stages would be the ideal scenario to **activate a recovery plan**. But only seeing retrospectively can we identify which measures were vital and which could lead to more problems

The main action usually taken in short-time is of a financial nature: it is to acquire debt. As such, indebtedness, followed by some indicators of solvency, are the variables with higher explanatory capacity for bankruptcy diagnosis (Correa et al., 2003).

Debt can be a powerful ally to overcome small problems, but it becomes a source of headaches when it becomes a structural problem to solve. Therefore, entrepreneurs base their decision to go beyond legal bankruptcy options and take actions to address the early crisis have better chances of solving them.

The experience of the partners in this project recommends the use of **predictive models and artificial intelligence** as an alternative tool to compare the course of actions that can serve to mitigate the negative effect in the short term but also look bright beyond the problems. It requires some investment on the side of the company, so it is better to start saving to jump into the technological innovation once they become more widespread and affordable.

SHORT-TERM REACTIONS



Amid the crisis, the attention is focused on **solving immediate problems**. While that approach is indeed effective in the short-term, but those choices could lead to undesirable long-term consequences.

That is why **early warning signals** should also aim for a fast recovery from a business crisis that can reduce the potential negative impact in the longer term. One central aspect to consider when anticipating measures is the formation of the team. The option of **restructuring the 'best fit' team** to lead the way out of the crisis is essential but also to lead the recovery process through close collaboration between the teams (*Collins and Kapucu, 2008*).

Bürkle and Hoffmann (2019) indicate that the costs of a reorganisation or restructuring in the face of crisis will inevitably lead to losses, and these have to be borne by the organisation's stakeholders. They argue that this may result in (power-laden) negotiations between different stakeholder groups, including shareholders (with or without an active role in the organisation), employees, creditors, and lenders on how these costs will be divided.

If the **balance of power between these stakeholders** remains constant during or despite the crisis, the shares, which the parties receive from the now reduced success, do not change; they would bear the "costs" of the crisis to the same extent if the power balance shifts in the face of crisis than the division of the costs carried by the different stakeholders will also change.

LONG-TERM SOLUTIONS



For instance, when the crisis is internally induced in a further prosperous economic climate, the shareholders are more likely to bear a more significant portion of the costs compared to the employees, who under such situations while often keep their jobs without having to deal with a salary decrease (as they would be able to switch to another employer relatively easy). In contrast, company crisis that is the result of general economic decline is often first shift onto employees who lose their jobs well before shareholders need to accept reduced dividends.

In their study, *Frère et al. (2019)*, point to the importance of **transparent communication between entrepreneurs and their funders during times of crisis**. As the authors indicate, maintaining trust is critical to prevent investors to 'default' and abandon the company. While keeping a crisis hidden from the public (and its investors) may make the crisis easier to handle for a firm, often (and especially as a result of the omnipresent social media) this is not possible.

Therefore, the authors claim the company should stay in control of its crisis communication. Indeed, admitting the crisis and being open about it may even shorten the crisis and help maintain trust amongst investors, while also enabling the firm to benefit from the support and resources of investors (and other stakeholders).

While their study was focused on larger companies that have to make their financial results public and that often deal with both formal and informal investors, some of the principles of crisis communication are also relevant to smaller firms. Notably, they too must ensure that information about a crisis is accurate and should reach the firm's stakeholders directly from the firm itself, to avoid rumours. Indeed, a certain level of emotion in the communication should be part of this communication as of these signals to stakeholders that the firm and its management are taking the crisis seriously and will take appropriate actions. Furthermore, firms must realise that communication should not begin at the onset of crisis but is a long term and ongoing process aimed at building understanding and trust when things are going well.

START FRESH FROM THE GROUND

For some entrepreneur the business crisis leads to a failure, meaning that the **business has to stopped, or entered a process of insolvency**. These situation can lead to very unpleasant experiences, like fighting with the curator or personal insecurities.

An organisation working with difficult case shared an anonymised database with one of the partners of this project, and **there were three main categories that lead to failure:**



ADMINISTRATIVE



PERSONAL



FINANCIAL PROBLEMS

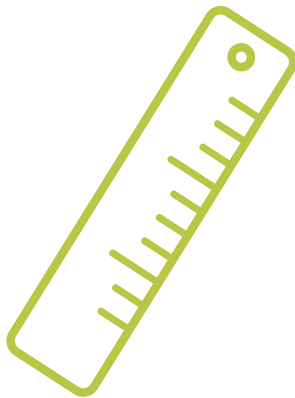
But the most important lesson that was identified in those advisory reports is that calling out for help early was crucial to prevent further problem and be able to start fresh. There was a clear correlation of dealing early with the crisis and start again with a new business (*Martens & Alvarado, 2019*).

The following example provides a combination of **small solutions** that were taken to **solve the immediate problem** and **long term ideas that have boosted the business.**

The entrepreneurs worked with ATA for support and advice. The entrepreneur was an architect working for many years for civil and public works for Municipalities Infrastructures through public procurement. During the last financial crisis, work was interrupted, and municipalities were not paying outstanding invoices, and no new project tender calls were published. She had a severe cash liquidity problem and had no certainty when she would recover the debt. With the support of a business mentor, her business plan was analysed.

She had expensive but dated machinery for printing architectural plans. The immediate recommendation was to sell the machinery and recover some liquidity and cut structural costs by working at home. Also to invest in new software and train herself in 3D designing of architectural plans and virtual simulations. She focused on the home improvements market for particular clients with a marketing campaign in professional social media and specialised groups.

Three months later, she was recovering from her financial distress and debts, and the virtual simulations proved to be a robust emerging product in the housing sector. Such technology is now essential in the present COVID-19 situation, and her business is actively growing in the domestic housing sector.



CONTRIBUTION TO THE SMARTUP CURRICULUM

To reduce the impact of the crisis, it is necessary to **provide a timeframe for devising and agreeing on solutions.**

The content of the curriculum needs to take into account that measures need to be focused on **quick and fast positive actions** and at the same time, long-term effects and consequences. The time frame for such solutions needs to be matched with financial and economic aspects of the business crisis as well as with emotional and social prevention or recovering from the crisis. In short, **to strengthen the resilience of entrepreneurs.**

09

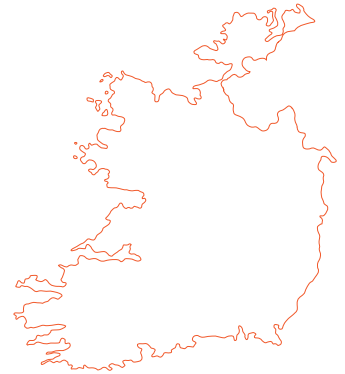
Examples of
organisations that
support SMEs





EXAMPLES OF ORGANISATIONS THAT SUPPORT SMES IN TERMS OF EARLY WARNINGS SIGNAL

Disclaimer: The list is subject to growth, check our website for the updated version. The organisations listed below include both public and private sources of advice to business owners facing a crisis. While many of them work with government agencies which speak for the legitimacy, the SmartUp consortium cannot take responsibility for the quality of the advice offered by these organisations.



IRELAND

1

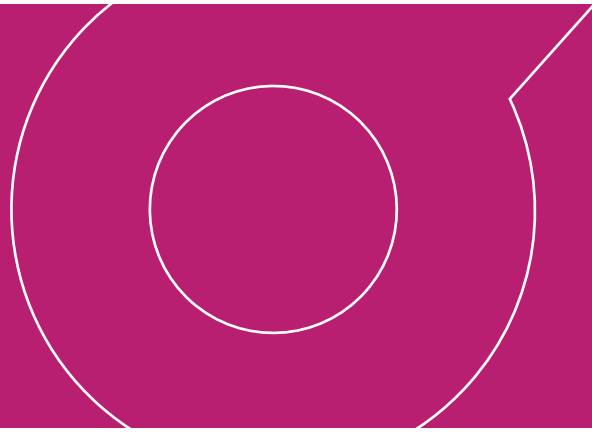
Organisation	Local Enterprise Offices
Expertise	The government agencies are responsible for SME development and skills. Deliver the majority of courses to owner/managers, including financial management but no dedicated course of supports for early failure warning. They provide grant and loan assistance to businesses, e.g. those facing trading challenges as a result of Brexit
Website	www.localenterprise.ie

2

Organisation	Small Firms Association
Expertise	Commissioned study on Irish SME financial literacy which is published on their website.
Website	https://www.sfa.ie/

3

Organisation	Davis Business Consultants
Expertise	Specialises in business turnarounds: Top 100 Tips for Business Turnaround- eBook
Website	https://www.davisbusinessconsultants.com/product/top-100-tips-for-business-turnaround/



SPAIN

1

Organisation

Regional Government Of Madrid

Expertise

Staff have participated in Early Warning Project and they are investigating further in the subject.

Website

<https://www.comunidad.madrid/transparencia/persona/pablo-garcia-valdecasas-rodriguez-rivera>

2

Organisation

F&J Abogados

Expertise

Buffer who has fiscal experts and has Worked in Public Administration as Taxpayers Ombudsman. They have participated in workshops related to public credits in insolvency procedures

Website

http://www.fj-martin.com/Profesionales/prof_socio_jmartin.asp



NETHERLANDS

- 1**

Organisation	IMK
Expertise	was founded by the government as an Institute for Small and Medium-sized Enterprises shortly after the Second World War to provide financial support to entrepreneurs in the Netherlands for the recovery and growth of their businesses.
Website	www.imk.nl
- 2**

Organisation	Stichting 115
Expertise	They have the mission to be the most accessible and the most effective help desk for entrepreneurs, where the relation can be optimally established with parties that can offer help.
Website	www.115.nl
- 3**

Organisation	Over Rood
Expertise	Guides entrepreneurs towards a financially healthy future. Whether you make too little turnover, want to start a company, your company has to stop, have debts, threatens to go bankrupt or is behind with your business administration.
Website	https://www.overrood.nl/overrood/over-rood/
- 4**

Organisation	Zelfstandigenloket Flevoland
Expertise	A collaboration of public entities that help entrepreneurs in distress to access support from public programs and private companies.
Website	https://www.zelfstandigenloketflevoland.nl/



UNITED KINGDOM

- 1**

Organisation	Begbies Traynor Group
Expertise	Consulting on Business Rescue, Insolvent practitioners. Articles on preventing business crisis
Website	https://www.begbies-traynorgroup.com/
- 2**

Organisation	Staffordshire Chamber of Commerce
Expertise	Business advice, recognise the gap of early warning signals
Website	sara.williams@staffordshirechambers.co.uk
- 3**

Organisation	Lets Do Business
Expertise	Business advice
Website	Graham.Marley@ldbgroup.co.uk
- 4**

Organisation	PNE Group
Expertise	one-day intensive workshop to understand the cashflow (forecast) with warning signs about problems in the business.
Website	billie.jenkins@pne.org
- 5**

Organisation	Bedfordshire Chamber of commerce – Risk Dashboard
Expertise	Risk Dashboard is a risk and case management platform designed to manage business risks and deliver growth. Designed specifically for SMEs, the Risk Dashboard helps business owners identify threats and vulnerabilities that are likely to have an impact on the organisation and provide them with the support they need to manage these risks.
Website	https://www.chamber-business.com/blog/the-risk-dashboard



EU/WORLDWIDE

1

Organisation	i-intelligence Switzerland
Expertise	Course for management, intelligence professionals, researchers, analysts about Strategic Early Warning for business
Website	https://www.i-intelligence.eu/corporate-services/

2

Organisation	Stratford managers corporation – USA
Expertise	Publications and consultancy about business risk and customer satisfaction
Website	https://stratfordmanagers.com/infographic-12-early-warning-signs-business-risk/

3

Organisation	Mower Advertising and Marketing consulting - USA
Expertise	Consulting about business risks, corporate crisis and crisis management
Website	https://www.mower.com/insights/smart-companies-build-early-warning-systems/



EU/WORLDWIDE

4

Organisation

Deloitte – Eagle Eye

Expertise

Eagle Eye was developed by Deloitte Czech Republic. Analytics leader Jan Balatka and his team built a model to perform online semantic analytics in order to identify threats and opportunities. Balatka: “We initially made Eagle Eye for a financial company that wanted to know whether their creditors were likely to go into insolvency.” Traditional monitoring systems review creditors by checking their bank accounts, credit transfers or financial statements. But by the time you start to see warning signs there, it is too late, explains Balatka. “By then the company is already in financial distress.”

Website

<https://www2.deloitte.com/nl/nl/pages/innovatie/artikelen/eagle-eye-searching-the-web-for-early-warning-signals.html>

5

Organisation

Early warning Europe and European Networks for Early Warning -EWE

Expertise

Early Warning Europe establishes Early Warning mechanisms in four EU Member States: Poland, Spain, Italy and Greece, providing support to 3500 companies in distress in 2017-2019. We also support the establishment of Early Warning mechanisms in five additional EU Member States in 2017-2019 – the Second Wave countries. The ultimate goal of the project is to establish Early Warning mechanisms in all EU Member States. The project EWE is providing advice & support to companies in distress. Such interventions can help prevent bankruptcies and its negative consequences.

Website

<https://www.earlywarningeurope.eu/>

10 | References





REFERENCES

- Alonso Méndez, Miriam; Carballo Martín, Sara; & Sanguino Bello, Carlos (2017). ¿Existen factores determinantes para el éxito o fracaso del concurso de acreedores?
- Begbies Traynor Group (2020). The early warning signs of business distress. Director Advice articles, retrieved from: <https://www.begbies-traynorgroup.com/articles/director-advice/the-early-warning-signs-of-business-distress>
- Bisson, C. & Diner, Ö. (2017). Strategic Early Warning System for the French milk market: A graph theoretical approach to foresee volatility. *Futures*. 87. 10.1016/j.futures.2017.01.004.
- Bucevska, V. (2015). Currency Crises in EU Candidate Countries: An Early Warning System Approach. *Panoeconomicus*. 62. 493-510. 10.2298/PAN1504493B.
- Bürkle, T., & Hoffmann, L. (2019). Unternehmensinterne Allokation von Restrukturierungskosten bei Unternehmenskrisen im Rahmen des Turnaround-Managements. In L. Hoffmann & T. Bürkle (Eds.), *Sanierung und Restrukturierung in Unternehmenskrisen Erklärungs- und Lösungsansätze* (Vol. 5). München: KCI KompetenzCentrum für interdisziplinäre Wirtschaftsforschung & Verhaltensoekonomie der FOM Hochschule für Oekonomie & Management.
- Caggiano, G. & Calice, P. & Leonida, L. (2014). Early warning systems and systemic banking crises in low income countries: A multinomial logit approach. *Journal of Banking & Finance*. 47. 258-269. 10.1016/j.jbankfin.2014.07.002.
- Camacho, M.; & Segovia, M. (2012). ¿Qué indicadores económicos – financieros podrían condicionar la decisión del experto independiente sobre la supervivencia de una empresa en su fase pre concursal? Evidencia empírica en España. *Revista Cuadernos de Contabilidad*, 13 (32), pp. 97-119. Spain
- Cardon, M. S., Stevens, C. E., & Potter, D. R. (2011). Misfortunes or mistakes?: Cultural sensemaking of entrepreneurial failure. *Journal of Business Venturing*, 26(1), 79-92.
- Correa, A.; Acosta, M.; & González, A.L. (2003). La insolvencia empresarial: un análisis empírico para la pequeña y mediana empresa. *Revista de Contabilidad*, 6, pp. 47-79. Spain
- De Bock, K. (2017). The Better of Two Worlds: Balancing Model Strength and Comprehensibility in Business Failure Prediction Using Spline-Rule Ensembles. *Expert Systems with Applications*. 90. 10.1016/j.eswa.2017.07.036.
- Early Warning Europe (n.d.). Guideline Criteria Eligibility prepared by Team in Denmark. Retrieved at: <https://www.earlywarningeurope.eu/tools-handbook-and-manual/guideline-criteria-eligibility>
- Eurofound (2017), *Exploring self-employment in the European Union*, Publications Office of the European Union, Luxembourg.
- Fischer, M., & Hose, C. (2019). Nachhaltige Unternehmensführung und strategisches Kompetenzmanagement als Krisenprophylaxe in einer modernen Theorie der Unternehmung. In L. Hoffmann & T. Bürkle (Eds.), *Sanierung und Restrukturierung in Unternehmenskrisen Erklärungs- und Lösungsansätze* (Vol. 5). München: KCI KompetenzCentrum für interdisziplinäre Wirtschaftsforschung & Verhaltensoekonomie der FOM Hochschule für Oekonomie & Management.
- Frère, E., Zureck, A., & Bensch, T. (2019). Strategische Finanzkommunikation in der Unternehmenskrise. In L. Hoffmann & T. Bürkle (Eds.), *Sanierung und Restrukturierung in Unternehmenskrisen Erklärungs- und Lösungsansätze* (Vol. 5). München: KCI KompetenzCentrum für interdisziplinäre Wirtschaftsforschung & Verhaltensoekonomie der FOM Hochschule für Oekonomie & Management.
- Government of Ireland (2018). *Enterprise 2025 Renewed: Building resilience in the face of global challenges*. Prepared by the Department of Business, Enterprise and Innovation. Retrieved from <https://dbei.gov.ie/en/Publications/Publication-files/Enterprise-2025-Renewed.pdf>
- Hill, Brian. (n.d.). The Signs of Business Failure. *Small Business - Chron.com*. Retrieved from <http://smallbusiness.chron.com/signs-business-failure-81220.html>

- Klopotan, I. & Zoroja, J. & Meško, M. (2018). Early warning system in business, finance, and economics: Bibliometric and topic analysis. *International Journal of Engineering Business Management*. 10. 184797901879701. Doi 10.1177/1847979018797013.
- Lang, M. & Schmidt, P. (2015). The early warnings of banking crises: Interaction of broad liquidity and demand deposits. *Journal of International Money and Finance*. 61. 10.1016/j.jimonfin.2015.11.003.
- Ludwig-Fröhler-Institut. (2001). Checkliste: Früherkennung von Unternehmenskrisen. Retrieved from Muenchen: Luenendonk, Martin (2014). When and how to pivot a business model. *Cleverism Magazine*. Retrieved at: <https://www.cleverism.com/when-how-pivot-business-model/>
- Martens J, Alvarado Valenzuela JF (2019) Hulp voor ondernemers in nood. *Maandblad Voor Accountancy en Bedrijfseconomie* 93(3/4): 127-134. <https://doi.org/10.5117/mab.93.33181>
- Macfadyen, L. & Dawson, S. (2010). Mining LMS data to develop an "early warning system" for educators: A proof of concept. *Computers & Education*. 54. 588-599. 10.1016/j.compedu.2009.09.008.
- McCallum E., Weicht R., McMullan L., Price A. (2018). *EntreComp into action: get inspired, make it happen* (M. Bacigalupo & W. O'Keefe Eds.), EUR 29105 EN, Publications Office of the European Union, Luxembourg. ISBN 978-92-79-79360-8, doi:10.2760/574864, JRC109128
- Nawaz, Moe (2014). Do You Recognise The 7 Early Warning Signs Of "Business Failure?". Article in *LinkedIn* retrieved from: <https://www.linkedin.com/pulse/20140827143234-52016337-do-you-recognize-the-7-early-warning-signs-of-business-failure>
- Sharma, S., & Mahajan, V. (1980). Early Warning Indicators of Business Failure. *Journal of Marketing*, 44(4), 80-89. 10.1177/002224298004400412
- Van Teeffelen, L. SIA RAAK Aanvraag (2019) Vroegsignalering van betalingsproblemen in het mkb Optreden voordat schulden ontstaan. Hogeschool Utrecht.
- Xu, K. & Zhao, Q. & Bao, X. (2015). Study on Early Warning of Enterprise Financial Distress — Based on Partial Least-squares Logistic Regression. *Acta Oeconomica*. 65. 3-16. 10.1556/032.65.2015.S2.2.
- Zacharakis, A. L., Meyer, G. D., & DeCastro, J. (1999). Differing perceptions of new venture failure: a matched exploratory study of venture capitalists and entrepreneurs. *Journal of Small Business Management*, 37(3), 1.
- Zobel, S., & Gellert, F. J. (2016). Der BERI-Index und seine Praktikabilität – Integraler Bestandteil von Präventionsmaßnahmen bei sich abzeichnenden Unternehmenskrisen. In L. Hoffmann & T. Bürkle (Eds.), *Sanierung und Restrukturierung in Unternehmenskrisen Erklärungs- und Lösungsansätze* (Vol. 5, pp. 1-38). München: KCI KompetenzCentrum für interdisziplinäre Wirtschaftsforschung & Verhaltensoekonomie der FOM Hochschule für Oekonomie & Management.



www.smartupproject.eu

PROJECT PARTNERS

momentum
[educate + innovate]

ATA
AUTONOMOS



 Amsterdam University
of Applied Sciences

 tww GmbH
the vision works

 EUEI European
E-learning
Institute