

A Work Project, presented as part of the requirements for the Award of a Master's
degree in Management from the Nova School of Business and Economics

CONSULTING PROJECT WITH ABC GROUP

MAXIMIZE THE EFFICIENCY OF THE M&A DECISION-MAKING PROCESS

Diogo Rodrigues Lopes | 32081

Closing the M&A Deal: Due Diligence, Deal Structure and Integration

Maria de Moura Guedes Abecasis | 32100

A Detailed Model for a Structured Target Valuation

Maria do Mar Norton de Matos Gellweiler | 44725

ABC's International Expansion: Screening of Potential Targets

Tomás Almeida Coimbra Casqueiro | 31975

Contextualizing ABC's Position: Internal and External Analysis

Work Project carried out under the supervision of:

Professor Constança Monteiro Casquinho

17.12.2021

DISCLAIMER

This Masters Work Project was performed by the Nova's Consulting Lab team and with the collaboration of a Portuguese cement company. The project is confidential, and it was solely created for the company's internal use and for the purpose of the Masters Work Project. As such, any use of this document other than the two above mentioned, such as the disclosure of any information, is prohibited.

To honour the Non-Disclosure Agreement made and to protect the client's confidentiality, the cement company will be designated as "ABC" throughout the project. Moreover, elements that would expose the company's financials and other private information were excluded.

The project was created for a management use function and in a best-effort basis. Thus, the Nova Consulting Lab does not pledge for the certainty and completeness of the work presented. Therefore, the reader should not make any decision based on the information contained in this document.

ABSTRACT | This work project presents a comprehensive view of the M&A process, specific to the cement industry. The goal of the project is to understand how the company can successfully and sustainably expand its worldwide presence, by improving each step of the M&A process. The project's final recommendations consist of clear and systematic strategic structures for each phase of the process, to ultimately maximize its efficiency. In this segment, a deeper dive into the valuation of the acquisition target is presented.

KEYWORDS | Cement Industry, M&A, Target Screening, Valuation Model

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- To **family and friends**, for the crucial motivation and support

GLOSSARY

Clinker: Solid material that is the backbone of cement production

Synergies: Additional value that is generated when combining two firms

Organic/ inorganic growth: Inorganic growth is the external growth from buying other businesses or opening new locations. In contrast, organic growth is internal growth the firm experiences from expanding its operations

FTE: Full-time equivalent is a unit of measurement of the hours worked by an employee on a full-time basis

Country risk premium: Additional returns that must be generated to cover the risks arising from a certain country

HHI: Herfindahl–Hirschman Index, a measure of market concentration

Intra-portfolio correlation: Measure of diversification calculated by using the weighted average of all unique asset correlations in the same portfolio

Integrated Factories: Factories that combine the entire cement value chain

UCD: Unit cost Denominator = Cement production + Non incorporated Clinker

Payout Ratio: The proportion of earnings a company pays its shareholders

Vertical integration: The supply chain of a company is owned and integrated by that same company

SWOT: Framework that shows the company's strengths, weaknesses, opportunities and threats

McKinsey 7S: Analysis of the company's hard (strategy, structure, system) and soft (share values, skills, style, staff) elements

Governance: Guiding principles and organizational structure of a corporation

Comps: Comparables (companies that share similar characteristics)

Football Field: Presentation format of the results from different valuation methods

GLOSSARY

Mtpy: Million tones per year

BS: Balance Sheet

IC: Invested Capital

IS: Income Statement

NI: Net Income

SOCF: Statement of Cash Flows

CIT: Corporate Income Tax

PV: Present Value

WACC: Weighted Average Cost of Capital

NPV: Net Present Value

IRR: Internal Rate of Return

NWC: Net Working Capital

CF: Cash Flows

FCF: Free Cash Flows

TV: Terminal Value

DCF: Discounted Cash Flows

N & N-1: Current period and previous period

Utilization rate: $(\text{Production} / \text{Capacity}) * 100$

EV: Enterprise Value

DD: Due Diligence

PMI: Post-merger Integration

S&D: Selling and Distribution

G&A: General and Administrative

LCU: Local Currency Unit

INTRODUCTORY NOTE

CONSULTING LABS

The Consulting Labs allow Nova SBE students to experience real-life challenges faced by consultants through established partnerships with several leading Portuguese firms, as ABC. Through this innovative learning approach, students understand the practicality of the concepts acquired in class and develop the necessary combination of analytical and soft skills to apply them. On the other hand, companies also benefit from the valuable insights given by such dedicated students that work vigorously in syndication with the firm to ensure high-quality and creative results.

ADVISORS

Chief Executive Officer
Chief Financial Officer
M&A Managing Director
Planning and Control Manager
Strategy and Business Development
Professor Constança Casquinho

THE TEAM



Tomás Casqueiro



Maria Abecasis

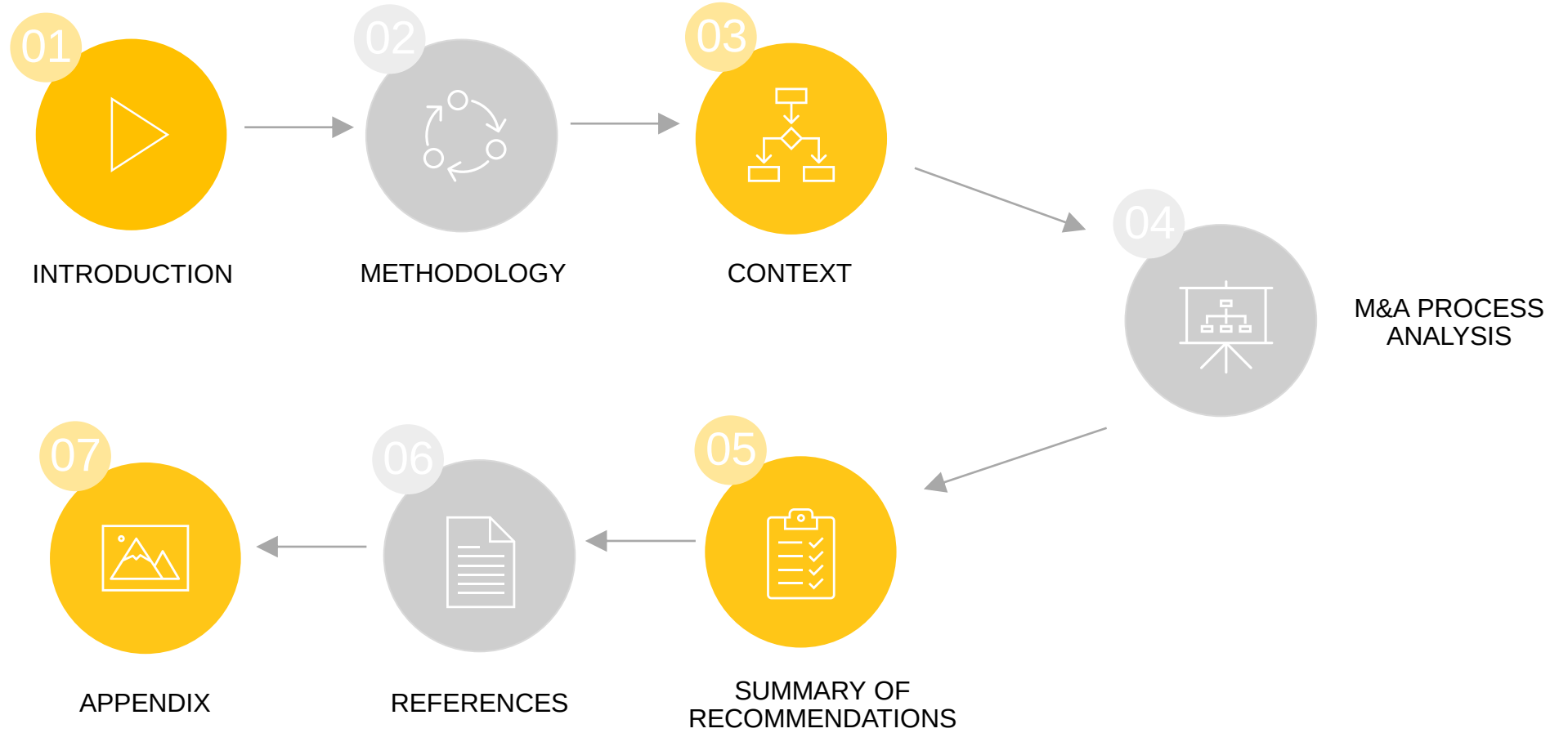


Diogo Lopes



Maria do Mar
Gellweiler

AGENDA



1. INTRODUCTION



This master thesis reflects the analysis, recommendations and deliverables the team assembled throughout a Consulting Lab Work Project in collaboration with ABC, whilst focusing on the company's M&A process

- This master thesis is the result of a **Consulting Lab Work Project** in collaboration with ABC, a Portuguese cement manufacturer. The primary focus of this four-month project was on systematizing and standardizing ABC's **M&A process** and related practices. For this, the team carried out data analysis, interviews with ABC staff, weekly meetings, problem-solving sessions with the client and 3 Steering Committees.
- The project comprised 3 stages:
 - 1) Context analysis, including internal and external analysis, and **diagnosis** of ABC's M&A process, dividing the process in several steps and presenting detailed recommendations for each of them, based on best practices;
 - 2) Deep-dive on the target screening stage of the M&A process, marked by the definition of relevant target selection criteria and the development of a **screening model** highlighting the most attractive markets for expansion and defining an action and watch list of prospect target companies;
 - 3) Deep-dive on the valuation stage of the M&A process, including the creation of a standardized **valuation model**, a multiples analysis' add-on model and a presentation template for ABC to follow when conducting target presentations to the Board, to discuss the valuation outcomes and acquisition specifics
- Overall, the team assembled a set of **recommendations** and **deliverables** ABC can implement in upcoming M&A projects. These will enhance ABC's M&A decision-making process and directly contribute to the company's international expansion ambitions.

The following literature review demonstrates how concepts, academic frameworks, and academic literature were used to organize the analysis

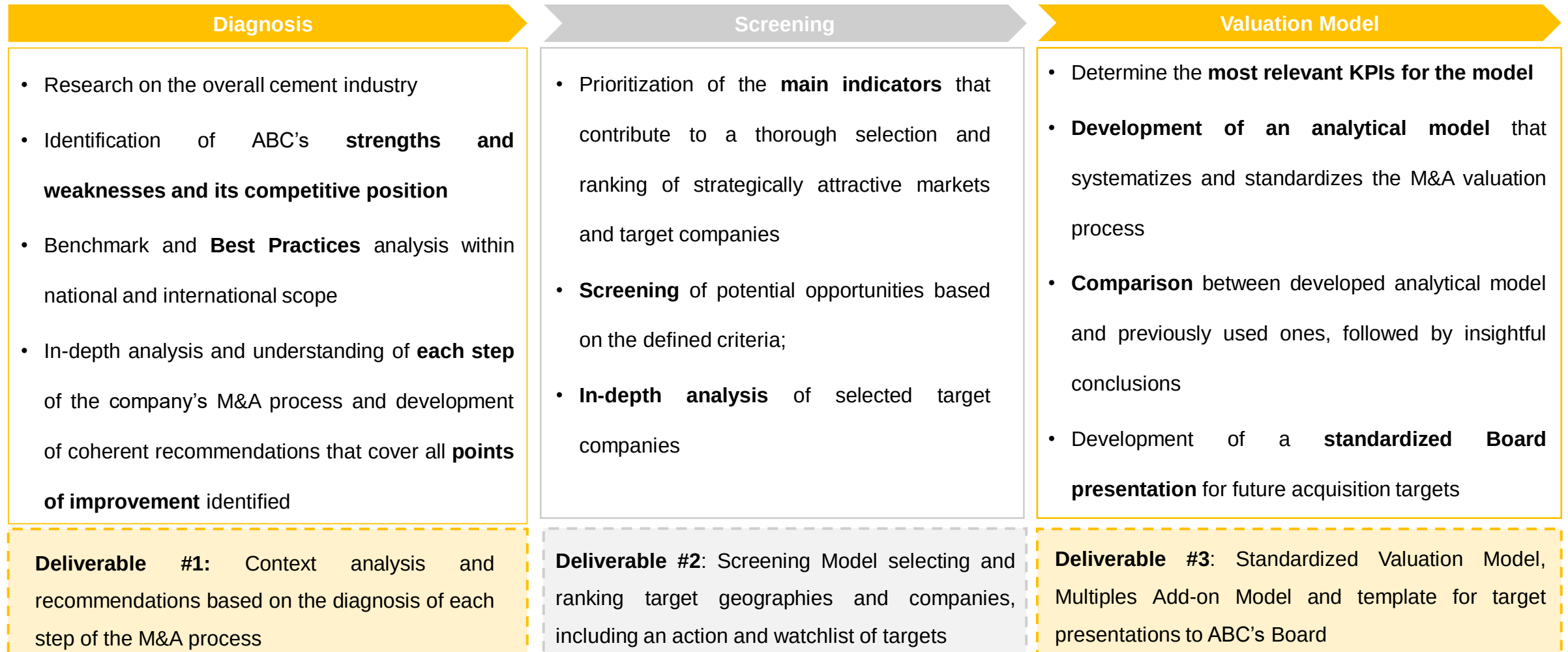
- **The Pyramid Principle, Barbara Minto** | The overarching empirical inquiry of a strategic work project in the Consulting Labs domain should be framed according to Barbara Minto's Pyramid Principle. As such, in order to communicate effectively, inductive reasoning should be applied, and begin with the end solution, followed by supporting facts and logically arranged arguments. Finally, in the attempt to withstand the answer and the subsequent recommendations on ABC's M&A process, both an internal and external analysis should be performed.
- **Situation, Complication, Question, Answer** | As a starting point of the analysis, and as popularized by Minto, the SCQA framework must be applied, in order to easily structure the problem in an understandable way.
- **McKinsey 7S's** | A framework that allows to understand the complexity and effectiveness of businesses by distinguishing between their hard and soft elements.
- **Porter's 5 Forces, Michael Porter** | A framework that describes the competitive environment of a given market such that ABC can leverage this information to deeply understand which forces are in place and that should be considered when grasping strategic decisions.
- **SWOT Analysis, Albert Humphrey** | A tool to identify both weaknesses and strengths of the company, together with the opportunities and threats involving it. In this sense, ABC is aware of the issues that should be tackled, as well as the chances to be followed.
- **Principles of Corporate Finance, Brealey & Myers | Investment Banking: Valuation, Leveraged Buyouts and Mergers & Acquisitions, Rosenbaum & Pearl** | Any real-world exercise in M&A should have sound academical pillars. These two books are best-in class examples of both the overall key issues of Corporate Finance and of the theoretical and practical aspects of an M&A process, accordingly. As such, the first was of particular importance when trying to grasp some complex Corporate Finance concepts, while the second one, was a constant guideline on how a M&A process unfolds and on how one should value a potential target. In fact, it highlighted the key steps of different valuation methodologies, its pros and cons and presented practical illustrative applications.

The project is focused on creating a systematized methodology that maximizes ABC's M&A process efficiency, allowing for a successful international expansion to ultimately decrease its national exposure

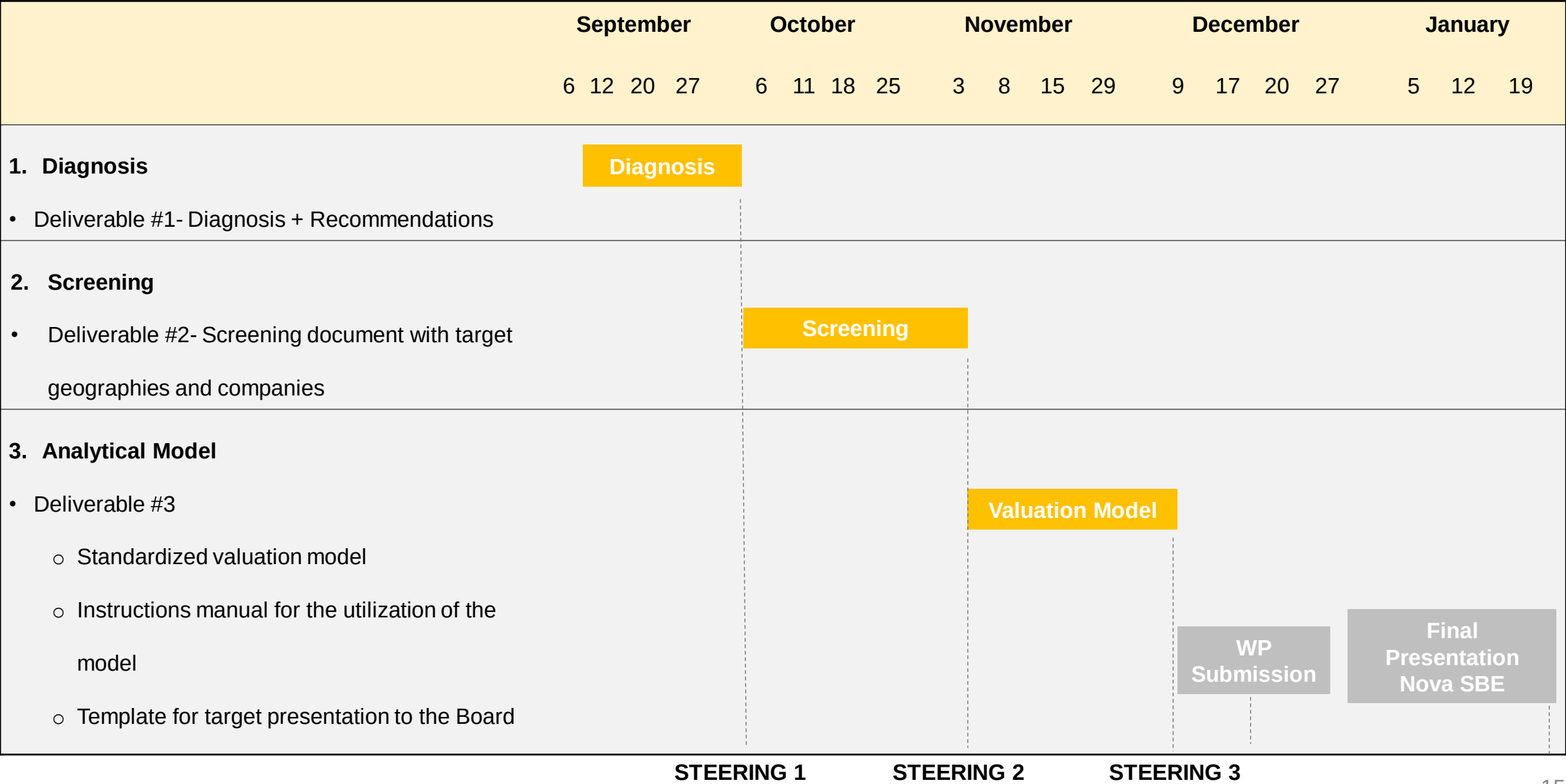
Situation	Complication	Question	Answer
 - ABC is a leading company in the Portuguese cement industry with almost 100 years of experience - The company is also presence across several international regions of the world such as Brazil, Tunisia and Lebanon	 - The company's high dependence on the Portuguese market has created a challenging situation in terms of cashflow diversification and stability - Moreover, the EBITDA target set for 2025 is unreachable without further international diversification	 Can ABC successfully increase its international footprint, in order to increase cashflow stability and reach its 2025 target EBITDA?	 YES! Create a methodology that allows the systematization of the M&A process. By creating the right process structure, ABC will be able to identify and exploit the best suited targets for international investment

2. METHODOLOGY

After performing an initial diagnosis of ABC's context and M&A process, a deeper analysis was conducted on both the target screening and valuation steps of this process



The project lasted 4 months and incorporated 3 Steering Meetings where progress was formally presented



Different investigation methods were key to ensure the development of insightful and coherent recommendations

DATA ANALYSIS	- Data gathering of the cement industry, past M&A transactions and analysis of current acquisition trends worldwide - Analysis of ABC's and best practices' documents – valuation models, board presentations, business plans, performance reviews, strategic revisions, due diligences and financial reports
WEEKLY PROBLEM-SOLVING SESSIONS	Regular meetings with the CFO, M&A Managing Director and the Strategy, and Business Development department to discuss critical issues on the models being developed and to gather further insights of the cement industry dynamics across the globe
INTERVIEWS	Conducted 7 in-depth interviews to several departments, each one aiming at enlightening the team about different topics: CEO – M&A Strategy and Vision; CFO – M&A Financials and Vision, recent transactions; Strategy Development at Parent Company – valuation models; Planning & Corporate Business Manager – post-acquisition follow-up; Corporate Finance Director – operations' financing and valuation models; Factory Manager - operations
STEERING COMMITTEES	The team performed 3 main presentations to the company, which were followed by insightful feedback sessions from each of the different departments present, suggesting further point of analysis



4. M&A PROCESS ANALYSIS



M&A has become increasingly important for the success of cement companies, as it allows them to leverage from benefits such as risk mitigation and operational synergies

WHAT IS MERGERS & ACQUISITIONS

DEFINITION



- M&A refers to the **financial transaction** that combines two firms. Through a merger, two companies become a single new entity, whereas through acquisitions, a company acquires another.
- In the cement industry, these financial transactions can essentially take on two forms: **brownfield** or **greenfield** foreign investments. The difference between the two lies essentially in the fact that, whereas in a brownfield, the company acquires an existing cement facility, in a greenfield the company builds a new one. The choice of which to use depends largely on the company's specific strategy, on investment amount, timing, desired control and market knowledge.

REASONS

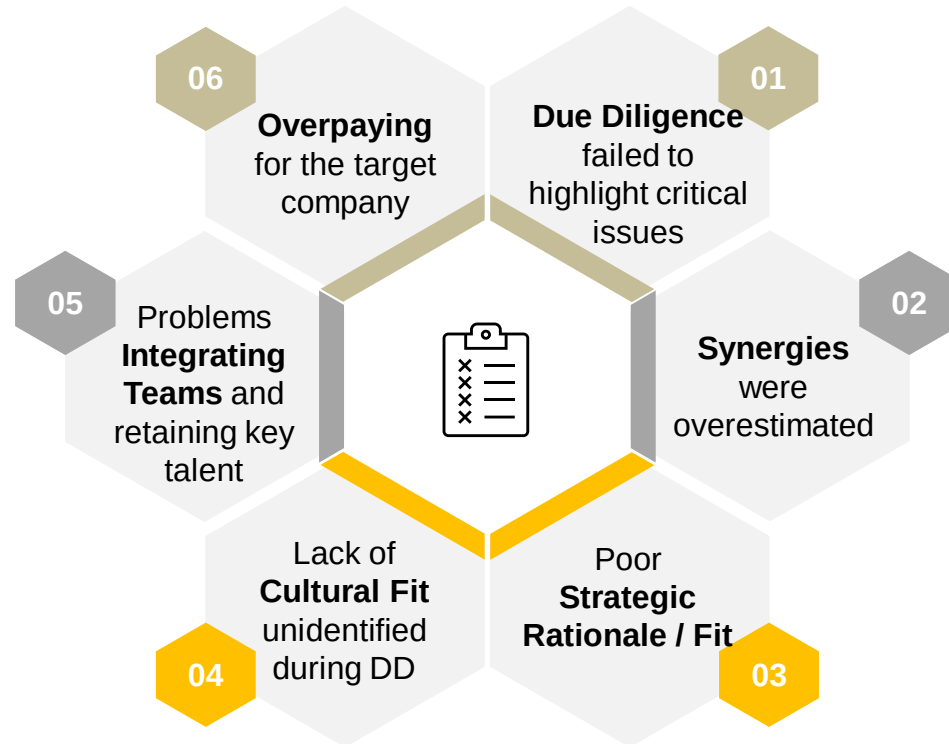


- M&A activities allow for the exploitation of several benefits such as **synergies** – in which the combined business becomes more valuable than the two businesses separately (ex. cost reductions) – faster **growth**, a stronger **market position** or portfolio **diversification**
- Moreover, as the cement industry is strongly characterized by its cyclical nature, being present in different geographies, through M&A, allows companies to **mitigate their exposure to market downturns**, while **leveraging the potential of market upturn**

Despite the negative prospects of M&A in this industry, ABC has the necessary capabilities to ensure the success of its expansion operations

REASONS FOR M&A FAILURE

70-90% of all M&A transactions fail, the main reasons being:



MITIGATING M&A FAILURE

Even though M&A has not guaranteed superior performance in the past, it is a crucial **growth driver** in the cement industry. Therefore, keeping in mind the three recommendations below, ABC will be able to thrive in such a challenging environment:

1. ABC should mitigate the risk of failure, and having a clear, **systematized process** is a starting point
2. As most successful companies do, ABC should incorporate a **programmatic M&A** approach
3. According to Wayne Gretzky: "Skate to where the puck is going, not where it has been." – As such, ABC must anticipate business trends by constantly monitor the different drivers

For each step of the M&A process, a common approach was followed: analysis, best practice, recommendation

DEFINE THE KEY STEPS OF THE PROCESS	• Literature review to assess the key stages of the M&A process, from defining the strategy to integrating the target • Comprehensive analysis of each step's purpose and objectives	
PERFORM AN INITIAL ANALYSIS	• Deep-dive on ABC's previous M&A projects, reviewing key documents, presentations and models used to construct each business plan • Assessment of potential improvements on each stage of the M&A process • Study of consulting frameworks to evaluate the performance on each step	
BENCHMARKING AND BEST PRACTICES	• Benchmarking against other cement players that have demonstrated success in their M&A endeavours • Analysis of company best practices within each step of the M&A process • Analysis of consulting best practices and suggested approaches while conducting each step	
PRESENTATION OF RECOMMENDATIONS	• Based on the diagnosis and assessment of best practices, the team formulated recommendations to enhance the performance on each stage, ultimately boosting the efficiency of ABC's M&A process as a whole	

To effectively implement an M&A structure, a pre-defined team should be appointed to each step to ensure the strategic alignment of the process



SITUATION ANALYSIS

- The assignment of responsibilities throughout the M&A process was **not clearly defined**
- In the past, there have been some challenges related to **communication** between teams, which unrolled M&A difficulties, such as the flow of the post-integration activities



TEAM IMPORTANCE

- A pre-defined team and pre-established roles would enable the **strategic alignment throughout the entire M&A process**
- **Continuous communication** between the different responsible departments is key to guarantee the success and flow of operations

Therefore



RECOMMENDATION

- ABC should apply the **RACI framework** to ensure clearly defined roles and responsibilities in each M&A phase
- This will ultimately foster the **alignment** of all involved departments and **guarantee the flow** of operations

ABC should apply the RACI framework to ensure communication between the different departments and effectively guarantee linearity across the M&A process

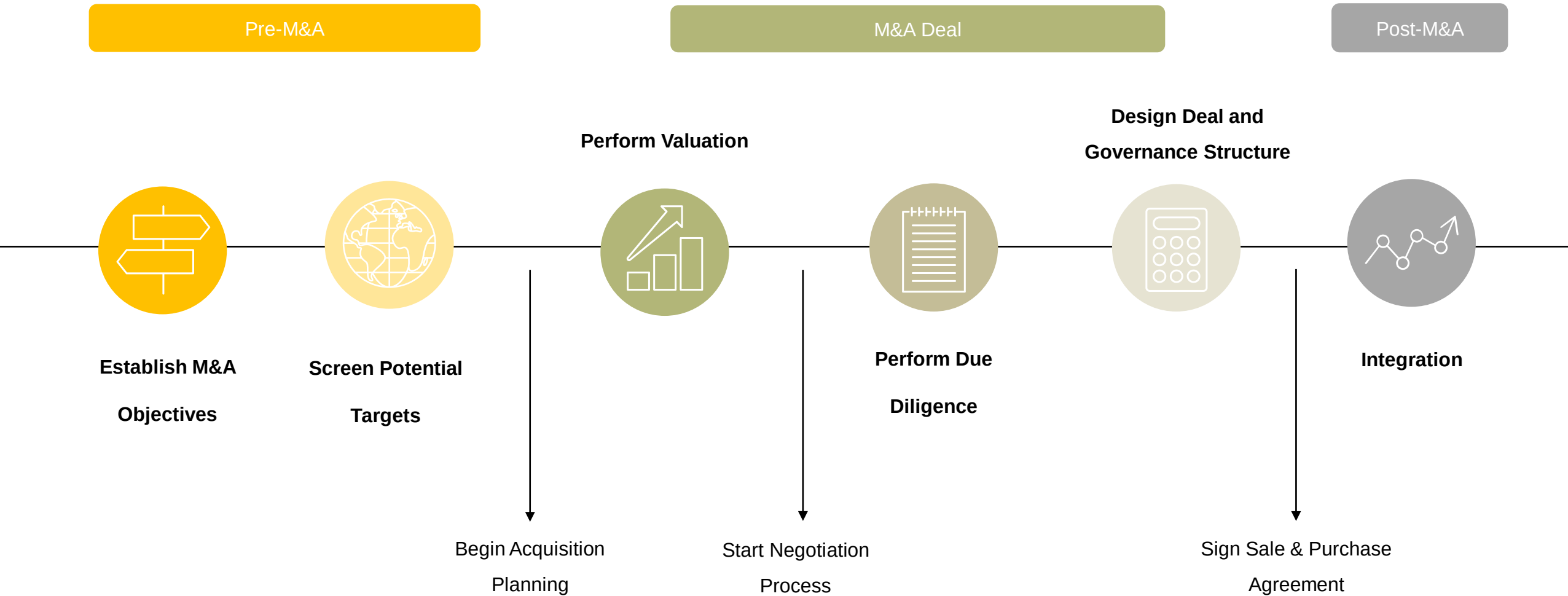
The RACI framework is commonly used to define employee roles and responsibilities for each task and decision that occurs over a projects life cycle. The chart is intended to guarantee that all members of a team have clear communication and efficient workflows.

Table 2- Illustrative example of the RACI framework in practice

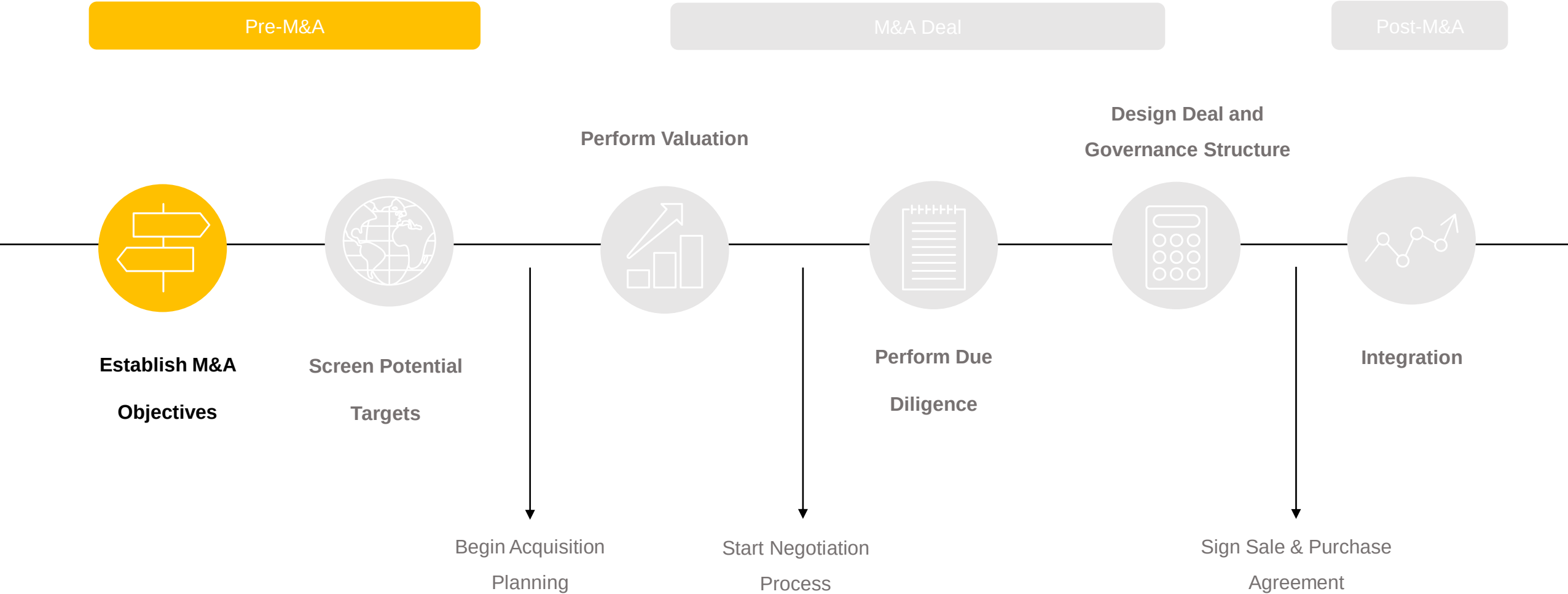
M&A Step	Department 1	Department 2	Department 3	Department 4
M&A Objectives	R: Reponsible	A: Accountable	C: Consulted	I: Informed
Target Screening	C	R	A	I
Valuation	A	R	I	C
Due Diligence	C	I	R	A
Deal & Governance Structure	R	A	I	C
Integration	I	C	A	R

- As such,
- **Department 1** would be responsible for defining the M&A objectives
 - **Department 2** would take the necessary actions for the implementation of these objectives
 - **Department 3** would be consulted during the decision-making process
 - **Department 4** would be informed about the M&A objectives decision

Once a team is defined, the M&A decision-making process will cover 7 main stages



The first step of the M&A process comprises the establishment of the objectives



Due to the cyclical nature of the industry and ABC’s important presence in Portugal, the firm should diversify its investment locations to successfully grow



CURRENT M&A GOALS

- ABC defined a clear **level of EBITDA** to be achieved by 2025 through **international expansion**
- The ultimate objective is to attain **steady cash-flows**



WHY?



SITUATION ANALYSIS

- ABC has been experiencing great **exposure and dependence** to cash-flows on the Portuguese market
- The cement industry in each market is **highly cyclical**, thus implying severe **impact on EBITDA** during market downturns
- Keeping assets mainly focused on a single market is making ABC’s cash-flows somewhat **unstable**



BEST PRACTICES

After analyzing the top cement companies worldwide, it can be assessed that their **diversified footprint** has allowed them to increase results, even during the on-going pandemic:

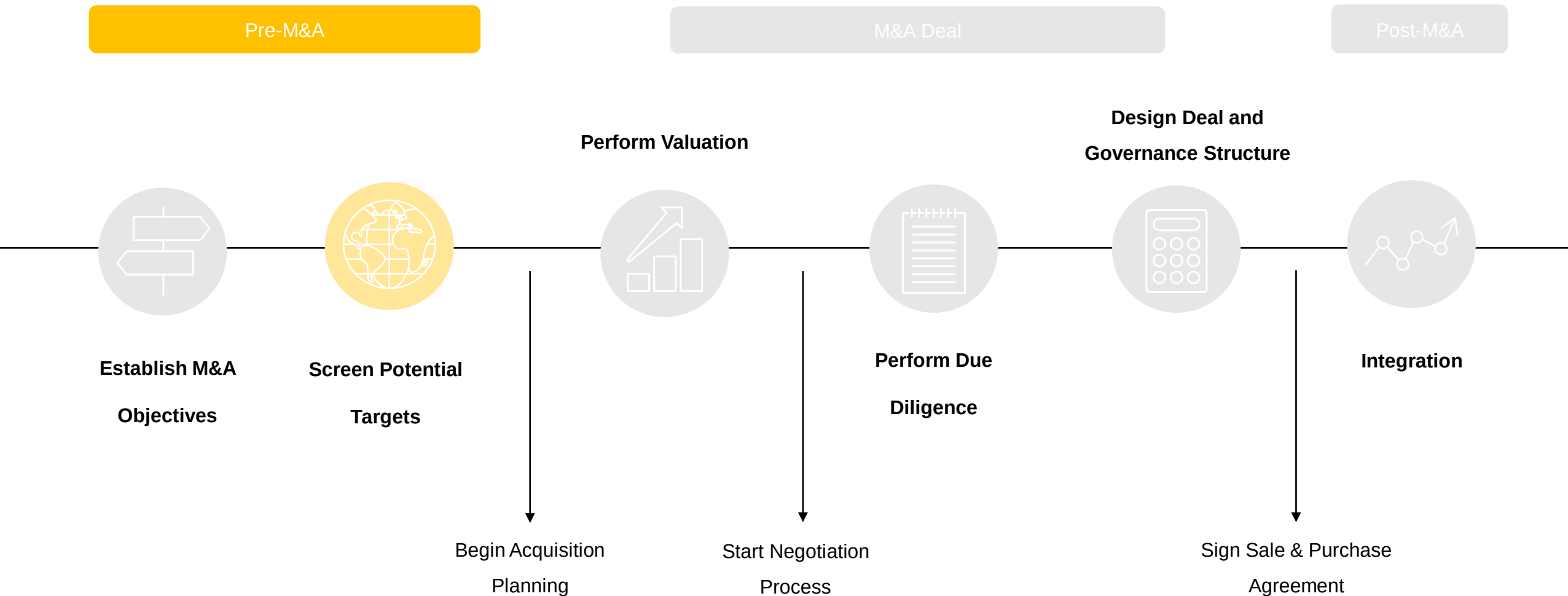
Table 3 – Data on Top Cement Companies

	Presence Worldwide (#countries)	Historical Cash-Flows (M\$)		
		2018	2019	2020
Lafarge Holcim	70	1 578	3 290	3 505
Heidelberg	60	9 32	1 529	2 105

“Multiregionals can **better respond to localized downturns**, just as they are more able to act resolutely to capture opportunities created by market upswings.” (McKinsey, 2015)

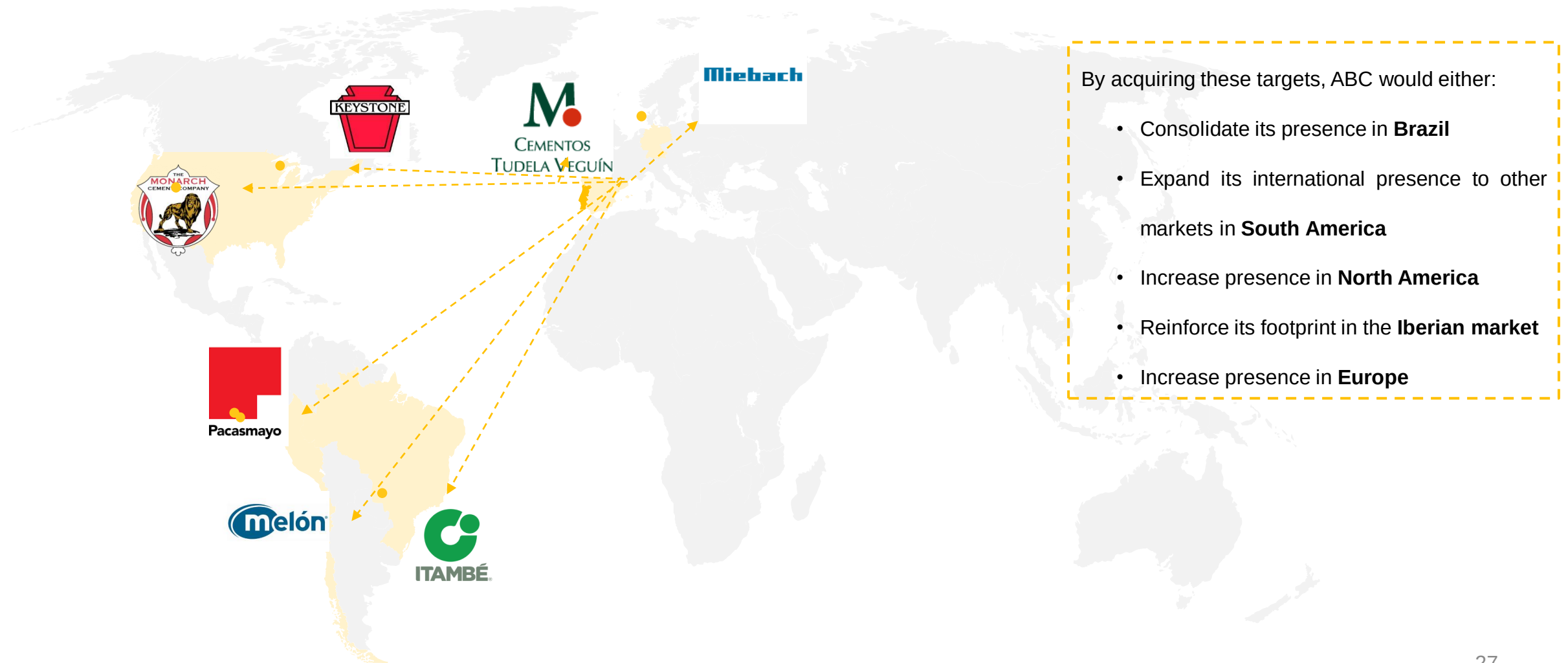
ABC should pursue its currently defined goals to **mitigate the risk** associated with the high Portuguese exposure and assure **steady cash-flows** in the future

Once a team is defined, the M&A decision-making process will cover 7 main stages



The selected action list companies come from diverse geographies including Europe, South and North America

Figure 3 – Action List Companies' Origin



Action List companies have a strong rationale for M&A activity in the near future

LATIN AMERICA

- Allows for ABC's **consolidation play** in South America
- ABC's **know-how**: footprint in Brazil; CEO's work experience in the region

Table 5 – Action List Companies' Information



3 Integrated Factories (Peru):

- Trujillo (2.9 Mt)
- Piura (1.6 Mt)
- Rioja (0.4 Mt)

Combined Capacity (4.9 Mt)

2 Grinding factories (Chile):

- Puerto Montt (0.6 Mt)
- Puchuncaví (0.6 Mt)

1 Integrated factory:

- Valparaíso (1.5 Mt)



FINANCIALS

Revenue = 324M
EBITDA = 78M
Market Cap = 492M
Net Debt = 241M
EV = 734M

Revenue = 252M
EBITDA = 46M
Market Cap = 122M
Net Debt = 91M
EV = 212M

INVESTMENT THESIS

- **2nd** most attractive market
- **Highest EV** from presented companies
- **Greatest EV/EBITDA** multiple (9.0x) but attractive EBITDA margin of 24%
- **Market leader** in Northern Peru, with 27% market share in the region
- **Financial investor** as majority shareholder, boosting deal feasibility
- **3rd** most attractive market
- Lower EBITDA margin (18%) but depicting an **increasing trend**
- **Lower multiple** than Pacasmayo (4.4x)
- **Market leader** in Chile

Action List companies have a strong rationale for M&A activity in the near future

UNITED STATES OF AMERICA

- Implies an investment in a **mature market**, mitigating political and forex risk. The US is heavily **reliant on imports**, implying that cement consumption is higher than national production, thus signaling **room to invest**
- 10th most attractive market according to the previously developed ranking

Table 5 – Action List Companies' Information



- 1 Integrated Factory (US Mid-Atlantic):
- Bath (1 Mt)

Revenue = 31M
EV = 151M

- Recently **blocked merger** with Lehigh Hanson (June 2021) by the FTC, suggesting **availability** for sale



- 1 Integrated Factory (US West North Central):
- Humboldt (1.4 Mt)

Revenue = 189M
EBITDA = 55M
Market Cap = 264M
Net Debt = -30M
EV = 234M

- **High EBITDA margin** (29%) and attractive EV/EBITDA multiple (4.25x)
- **More attractive** than Keystone – same market advantages but financial data is better aligned with ABC's strategic goals

Action List companies have a strong rationale for M&A activity in the near future

EUROPE

- Allows for portfolio expansion in **mature markets** and increased ABC's **marker power** in Europe
- Markets exposed to the **European Union Regulation** thus mitigating political, currency and CO2 legislation divergences

Table 5 – Action List Companies' Information

Miebach

M
CEMENTOS
TUDELA VEGUÍN

FACTORIES

1 Integrated factory (Germany North) - Portlandzementwerk Wittekind HM:

- Wittekind (1.4 Mt)

3 integrated factories (Spain Oeste):

- Aboño – Carreno (2,4 Mt)
- La Robla (1,2Mt)
- Tudela Veguín (0,2)

2 grinding factory:

- Narón (0.7Mt)

Combined Capacity (4.5 Mt)

FINANCIALS

Revenue = 67M

EBITDA = 6 M

EV = 49M

Revenue = 224M

EBITDA = 21 M

EV = 190 M

INVESTMENT THESIS

- Group ultimately owned by GBR Hugo Miebach (welding material), signaling that, since this company is a **non-core** part of the portfolio, there might be **availability** for sale
- **Consolidation** in the Iberian market, allowing to defend Portuguese operations
- 5th player with the **highest market share** in Spain (~9%)
- Part of Corporación Masaveu group that is **present in Brazil**, where ABC is also established

Action List companies have a strong rationale for M&A activity in the near future

BRAZIL

- Allows for ABC's **consolidation play** in South America and in Brazil
- ABC's **know-how** and **established presence** in the region, which would foster potential **synergies**

Table 5 – Action List Companies' Information



FACTORIES

- 1 Integrated factory (Brazil South):
- Balsa Nova (2.8 Mt)

FINANCIALS

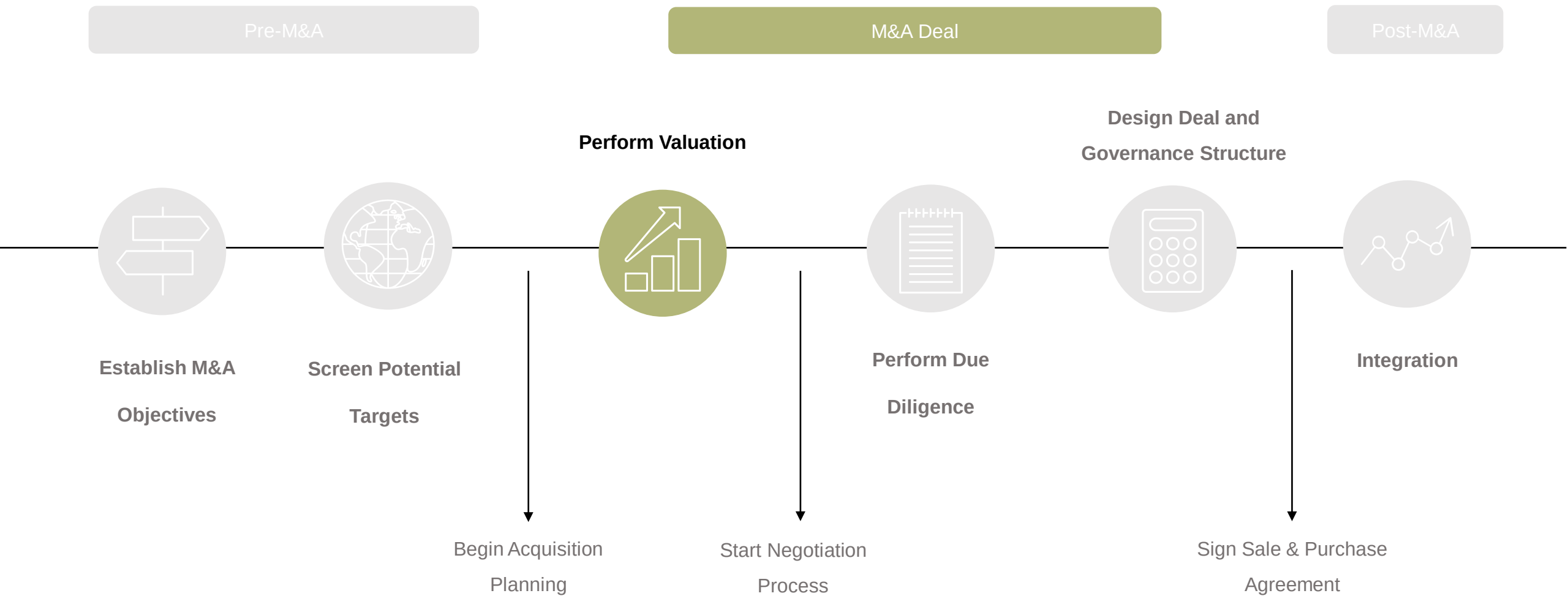
Revenue = 130 M

EBITDA = 51.9 M

INVESTMENT THESIS

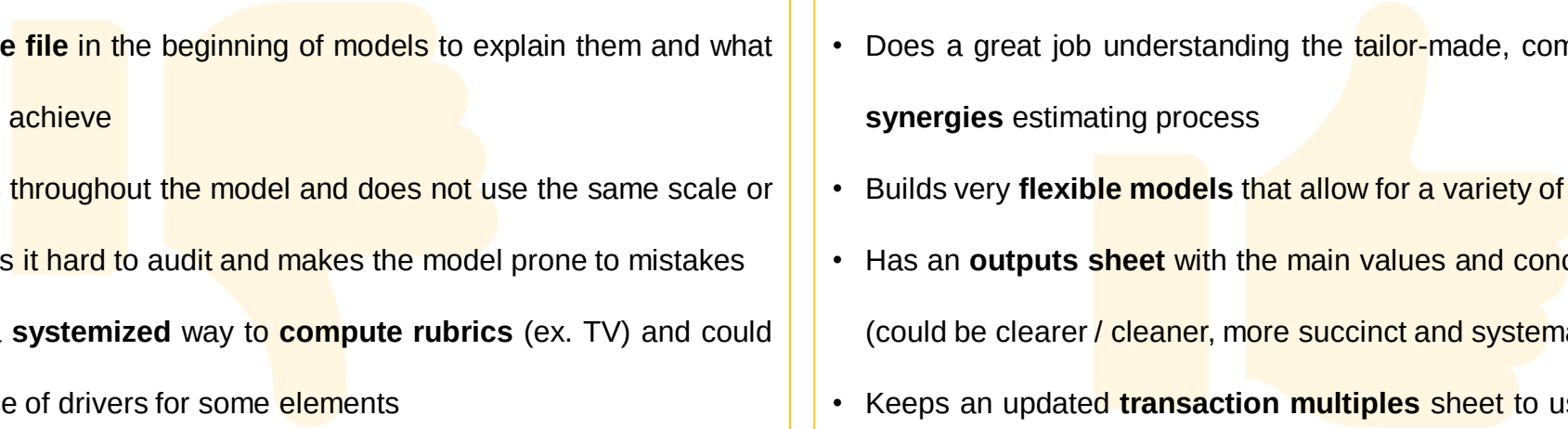
- **#1** attractive market within Brazil (South)
- Relatively close to ABC's factory in the region, **facilitating logistics**
- **Financial Investor** as majority shareholder, boosting deal feasibility

Once the target is selected, a financial valuation is conducted



ABC is already overperforming in several aspects, but can also improve on some issues to mitigate the risk of a bad valuation

SITUATION ANALYSIS

- 
- Does not have a **standardized model structure**, that would allow for comparability and eases the different valuations
 - Lacks a **Read Me file** in the beginning of models to explain them and what they are trying to achieve
 - **Hardcodes** cells throughout the model and does not use the same scale or unit, which makes it hard to audit and makes the model prone to mistakes
 - Does not have a **systemized way to compute rubrics** (ex. TV) and could improve its choice of drivers for some elements
 - Fails to clearly separate **synergies** from the stand-alone value of the target
 - Lacks a standard company **comparables sheet** to work with in valuations
- Has a lot of **knowledge and experience** when making assumptions for the selected drivers
 - Does a great job understanding the tailor-made, complex essence of the **synergies** estimating process
 - Builds very **flexible models** that allow for a variety of different scenarios
 - Has an **outputs sheet** with the main values and conclusions of the model (could be clearer / cleaner, more succinct and systematized)
 - Keeps an updated **transaction multiples** sheet to use as a data base to conduct its multiples valuation

By having a clear, improved and **standardized valuation process** ABC can mitigate the risk of a bad valuation (the golden key for an M&A transaction to go forward), which can, in several ways, be catastrophic for the company

Valuation is a crucial step in any M&A transaction and it directly implies the value created and captured by both parties

An M&A transaction is an investment decision. Therefore, ABC must assess the acquiree (and its CFs) to, in an informed manner, establish an offer that allows them to capture value. Two of the most common and reliable valuation methodologies are the DCF and the multiples analysis.

DISCOUNTED CASH FLOWS

- ABC should conduct its DCF analysis by:
 1. Study the Target and Determine Key Drivers
 2. Project Free Cash Flows
 3. Compute Weighted Average Cost of Capital
 4. Determine Terminal Value
 5. Calculate Present Value and Determine Valuation
- The value of the project will then be the discounted sum of two parcels: i) The FCFs that the acquiree would tend to yield on a **stand-alone** basis; and ii) The FCFs of the **synergies** and operational improvements that will emerge from the operation
- ABC should only pursue projects with a clear positive NPV, an $IRR > x \times WACC$ and a payback period lower than the company's ceiling

MULTIPLES ANALYSIS

- Similar companies and transactions provide a highly relevant reference point for valuing a given target
- ABC should conduct its multiples analysis by:
 1. Select comparable companies and transactions based on:

Business Profile	Financial Profile
Sector	Size
Products and Services	Profitability
Customers and End Markets	Growth Profile
Distributions Channels	ROI
Geography	Credit Profile
 2. Locate the necessary financial information
 3. Compute key statistics, ratios and multiples
 4. Benchmark the comparable companies and transactions
 5. Determine the valuation

ABC should adopt a standardized model to value potential acquisition targets through the DCF methodology

The model is composed by five separate parts

Cover & Read Me File



- Brief overview of the **model structure** and its purpose
- **Step-by-step guide** and general tips
- Additional details explaining the computation of more complex inputs

Historical Data



- Global **macroeconomic** and **sector** information
- Historical Statements of the target (**IS & BS**)
- **KPI's** regarding the main rubrics of the statements and their drivers

Inputs



- Global **macroeconomic** and **sector** assumptions
- **Scenarios regarding the forecast** of the key drivers and rubrics

Financials



- **Forecasted statements** (IS, BS SOCF)
- Extensive **ratio analysis**
- Valuation table with the **FCFs, the DCFs, the EV and Equity value**

Synergies



- **Sources** of synergies
- **Forecasted synergies**
- Synergies PV and percentage of total TV

In the first sheet of the model, ABC should input information about the economy, the sector and the target

1

GLOBAL
INFORMATION

- **Macroeconomic historical information**, of the US, the Euro-Zone and the target country, such as: population, GDP, inflation, interest and corporate tax rates
- **Sector historical information**, such as consumption



2

INCOME
STATEMENT
KPIS

- **Reformulated historical version of the IS (including respective Drivers and KPIS) that fits the cement industry with:**
 - i) internal and external sales of cement; ii) sales of clinker; iii) other revenues, iv) transport costs; iv) production variance;
 - vi) variable and fixed production costs; vii) S&D costs; viii) other variable and fixed costs; ix) G&A costs; x) CO₂ costs; xi) bad debt; xi) provisions; xii) income from other Bus; xiii) D&A; xiv) other results; xv) financial results; and xvi) CIT



3

BALANCE
SHEET KPIS

- **Reformulated historical version of the BS (including respective Drivers and KPIS) that fits the cement industry with:**
 - i) intangible and tangible assets; ii) goodwill; iii) deferred tax assets and liabilities; iv) other non-current assets; v) inventories; vi) accounts receivable; vii) other current assets; viii) accounts payable; ix) other current liabilities; x) operational cash; xi) investments; xii) net debt; xiii) equity



In the Inputs sheet, ABC should forecast, in a common manner, the rubrics worked in the Historical Data sheet

COMMON APPROACH TO FORECAST

Figure 4 - Illustrative example of how to forecast a certain rubric or driver

Rubric X		2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
1st Scenario		n/a	n/a	n/a	-	-	-	-	-	-	-	-	-	-
2nd Scenario		n/a	n/a	n/a	-	-	-	-	-	-	-	-	-	-
3rd Scenario		n/a	n/a	n/a	-	-	-	-	-	-	-	-	-	-
Selected Case	Scenario 2	n/a	n/a	n/a	-	-	-	-	-	-	-	-	-	-
	Scenario 1													
	Scenario 2													
	Scenario 3													

1. For every driver the user should:

- Study the historical information
- Make assumptions about its evolution
- Select the scenario to use when computing the firm's value



2. For some drivers the user should:

- Choose between different methods to forecast
- Consider supporting schedules (ex. depreciation)
- Adapt the model to fit their tailor made, complex essence (ex. CO₂)



FORECAST GUIDE

INCOME STATEMENT

Operating Revenues = internal revenues + external revenues

• **Internal Revenues** = selling price * quantity sold

- Selling price = price N-1 * (1+ price real growth) * (1+ inflation)
- Quantity sold = market share * cement volume of the market (= cement volume of the market N-1 * cement market growth) **OR** quantity sold N-1 * cement volume growth

• **External Revenues** = cement revenues + clinker revenues + other revenues

• **Cement Revenues**: = quantity sold * cement selling price

- Selling price = selling price N-1 * (1 + price real growth) * (1 + inflation)
- Quantity sold = quantity sold N-1 * (1 + cement volume growth)

• **Clinker revenues** = selling price * clinker quantity sold

- Selling price = average clinker selling price N-1 * (1+ price real growth) * (1 + inflation)
- Quantity sold = quantity sold N-1 * (1 + clinker volume growth)

• **Other revenues** = % of other revenues * (cement + clinker revenues)

In the Inputs sheet, ABC should forecast, in a common manner, the rubrics worked in the Historical Data sheet

FORECAST GUIDE

Total Transport Costs = internal transport costs + external transport costs

- **Internal Transport Costs** = % of internal sales * internal sales **OR** (clients (LCU/t) + internal (LCU/t) – revenues (LCU/t)) * internal quantity sold
 - Clients = clients N-1 * (1 + clients cost real growth) * (1 + inflation)
 - Internal = internal N-1 * (1 + internal cost real growth) * (1 + inflation)
 - Revenues = revenues N-1 * (1 + revenues real growth) * (1 + inflation)
- **External Transport Costs** = % of external sales * external sales **OR** (inland (LCU/t) + port (LCU/t) + CIF (LCU/t) – revenues (LCU/t)) * internal quantity sold
 - Inland = inland N-1 * (1 + inland cost real growth) * (1 + inflation)
 - Port = port N-1 * (1 + port cost real growth) * (1 + inflation)
 - CIF = CIF N-1 * (1 + CIF cost real growth) * (1 + inflation)
 - Revenues = revenues N-1 * (1 + revenues real growth) * (1 + inflation)

Production Variance = % of operating revenues * operating revenues

Net Revenues = Operating Revenues – Total Transport Costs

Production Variable Costs = % of operating revenues **OR** unit variable cost * UCD

- Unit variable cost = other variable unit cost + packaging unit cost + thermic energy unit cost + electricity unit cost + raw materials unit cost
- **Each unit cost** = unit cost N-1 * (1 + cost real growth) * (1 + inflation)
- **Unit cost denominator** = Cement production + Non incorporated clinker

+ **Production Fixed Costs**¹ = unit fixed cost * UCD

- Unit fixed cost = staff unit cost + maintenance unit cost + other fixed unit cost

+ **Sales & Distribution Costs**¹ = unit S&D cost * UCD

+ **Other Variable Costs**¹ = unit other variable cost * UCD

+ **Other Fixed Costs**¹ = unit other fixed cost * UCD

+ **G&A Costs**¹ = unit G&A cost * UCD

= Operational Costs

1. All these costs follow the same structure as Production Variable Costs where each unit cost = unit cost N-1 * (1 + cost real growth) * (1 + inflation). The unit cost denominator is also the same

In the Inputs sheet, ABC should forecast, in a common manner, the rubrics worked in the Historical Data sheet

FORECAST GUIDE

CO₂ Costs = purchase of rights * unit right cost - sale of rights * unit right price

Bad Debt = % of operating revenues * operating revenues

Provisions = % of operating revenues * operating revenues

Net Revenues – Operational Costs – (Production Variance + CO₂ Costs +Bad Debt + Provisions) = **EBITDA From Cement**

Income from other BU's = % of EBITDA from cement * EBITDA from cement

EBITDA = EBITDA from cement + Income from other BU's

D&A = D&A rate * average of tangibles and intangibles net of land of N & N-1

EBIT = EBITDA – D&A

Other Results = free forecast (case by case basis)

Financial results = financial income + financial expenses

- Financial income = (interest rate + spread) * net cash
- Financial expenses: (interest rate + spread) * net debt

EBT = EBIT – Other Results + Financial Results

CIT = adjusted EBT * corporate income tax

- Adjusted EBT: EBT – Deductions + Additions + Other adjustments

Net Income = EBT - CIT

BALANCE SHEET

Operating Cash

- Operational cash (days of operational costs) * operational costs / 365

+ Inventories

- Average holding period * operational costs / 365

+ Accounts receivables

- Average collection period* operating revenues / 365

+ Accruals and Deferrals

- Accruals and deferrals (days of revenues) * operating revenues/ 365

+ Other current assets

- Other current assets (days of revenues) * operating revenues/ 365

- Accounts payable

- Average payable period * operating costs /365

- Other current liabilities

- Other current liabilities (days of operating costs) * operating costs / 365

= Net Working Capital

In the Inputs sheet, ABC should forecast, in a common manner, the rubrics worked in the Historical Data sheet

FORECAST GUIDE

- + **Net Fixed Assets** = land + other gross fixed assets – accumulated depreciation
 - **Land** = free forecast (final balance = initial balance + additions – deductions)
 - **Other Gross Fixed Assets** = tangible assets + intangible assets – land
 - Final balance = initial balance + Capex – deductions
 - Capex = maintenance capex (LCU/t) * production + expansion capex
 - **Accumulated depreciation** = initial balance + depreciation N – deductions
- + **Goodwill** = free forecast (changes when there is an acquisition or impairment)
- + **Other Noncurrent Assets** = free forecast (works like a bag to include any accounts missing and, so, it doesn't have a one size fits all)
- + **CO₂ Permissions** = final balance = initial balance + free rights – CO₂ consumption of rights – sale of rights + purchase of rights
- + **Other Deferred taxes (net)** = free forecast (can be set to 0 as soon as possible)
- **Grants, Donations and Bequests** = CO2 Permissions – Deferred taxes related to CO2 permissions
- **Deferred Taxes Related to CO2 permissions** = 25% * CO₂ Permissions

= Invested Capital

+ **Investments** = free forecast (final balance = initial balance + additions – deductions)

= Capital Employed

Equity = opening Balance + net Income – dividends + Capital increases/decreases + adjustments

• **Dividends** = payout ratio * net income

+ **Net Debt**¹ = initial balance – cash balance N

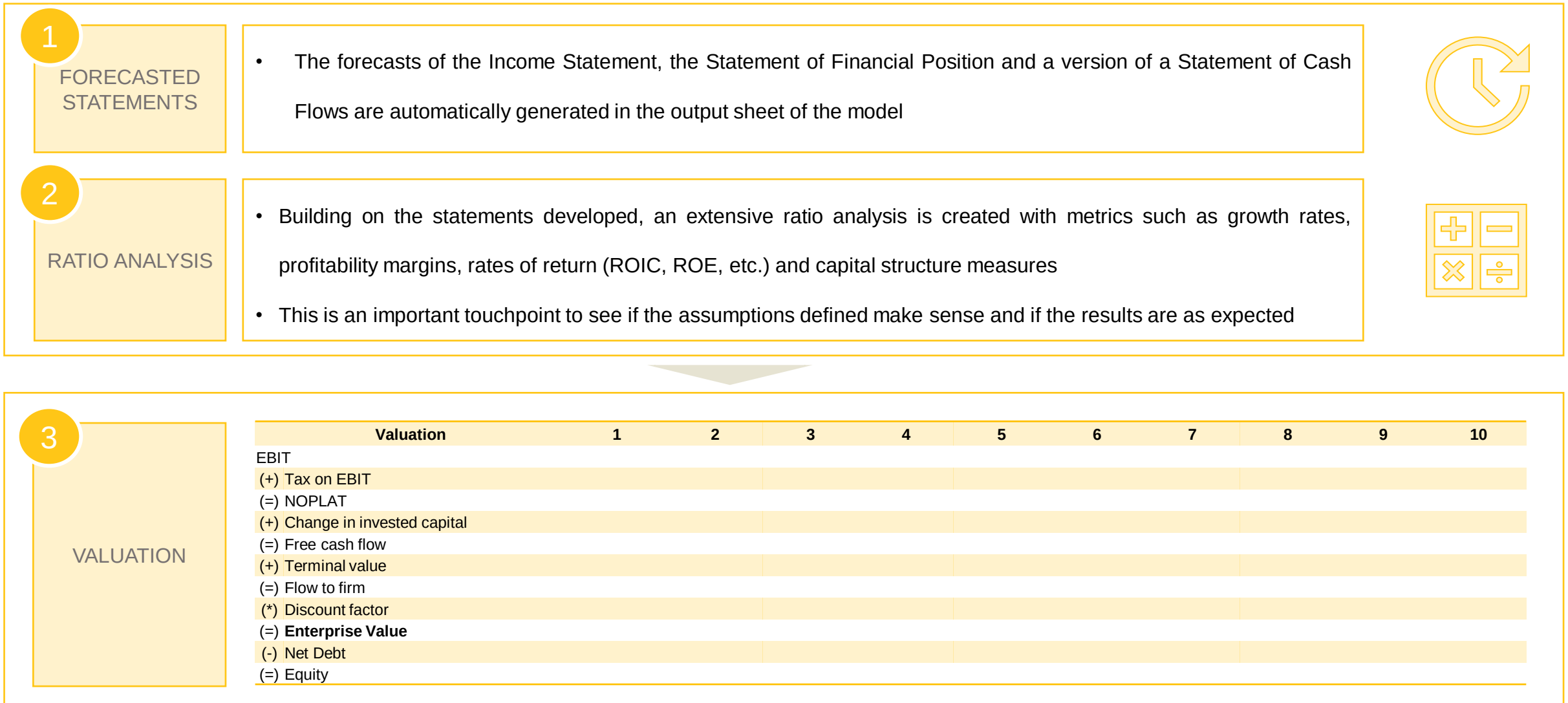
= Capital Employed



Once the Historical Data sheet and the Inputs sheet are properly filled out, the output sheet (Financials) and, consequently, the enterprise value of the target will automatically be generated

1. In a valuation either Net Debt or Equity must work as a plug-in for the balance sheet to be in equilibrium. In our exercise we use the Net Debt/Cash as the plug

The output sheet is the outcome of the previous work and delivers the stand-alone value of the target



1. The WACC comes from the Holding Company and the LT growth rate is derived from the ratio analysis.

Source: Valuation Model

Synergies are an important part of any deal valuation, but are also tricky. ABC should spend some time analyzing their origin and gauging their expected value

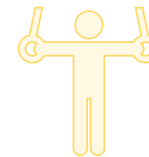
SYNERGIES ORIGIN

Main synergies	Control	Time to Achieve	Breakdown
Revenue	Low	Intermediate	Price Increase Quantity Increase
Cost	High	Fast	Fixed Costs Reduction Variable Cost reduction
Invested Capital	High	Fast	NWC Improvements Capex Reduction
Others	Medium	Intermediate	Tax optimization Better Financing Terms

- **Cement companies' main synergies** are:
 - Increase in prices if companies operate in the same regions
 - Cost reductions

ABC should always try to **maximize the expected value of synergies** by making an offer that: 1) isn't too high (makes the seller capture all synergies); 2) isn't too low (the seller rejects it and all synergies are lost)

HOW ABC SHOULD ESTIMATE SYNERGIES



- Estimating synergies is a very tailor-made process and, so, the model benefits from being flexible and comprehensive
- ABC should start with a detailed **analysis of their origin** followed by a **quantification of their expected value**

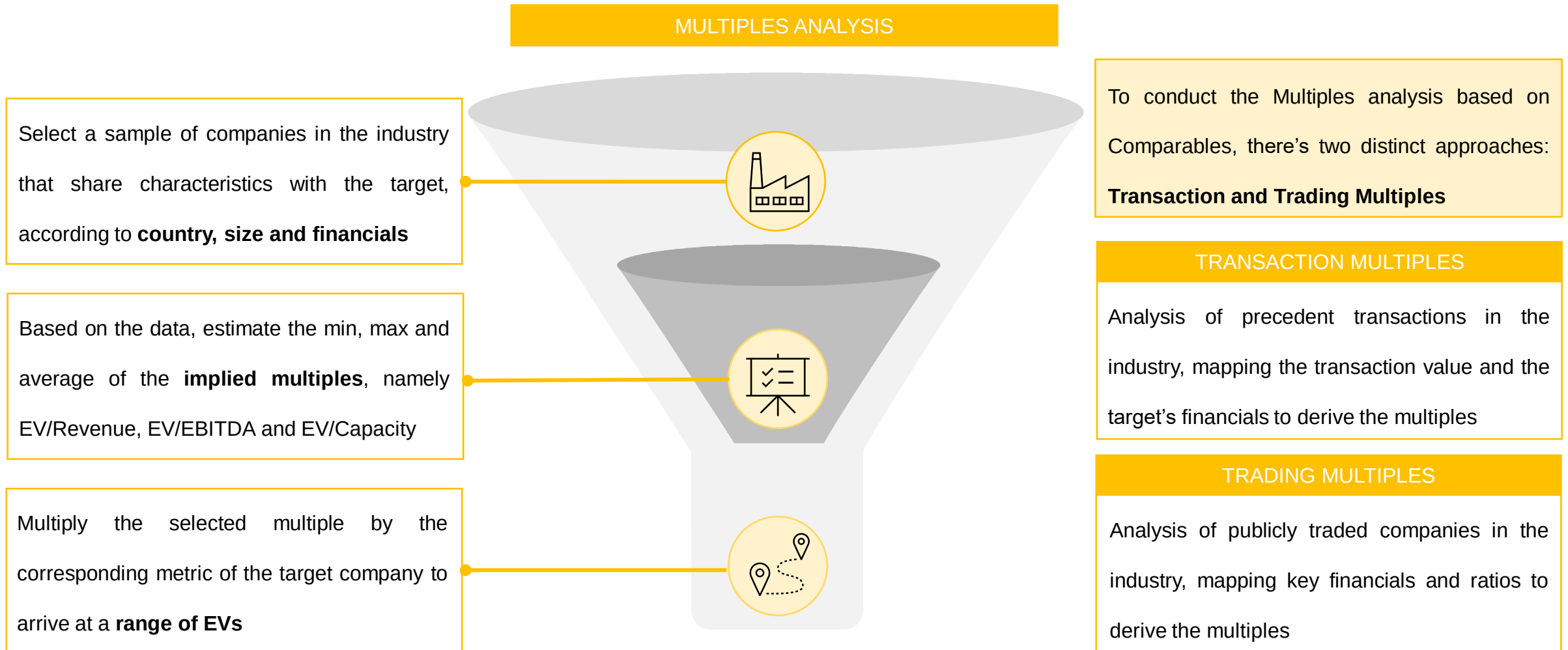
The Process:

- Incremental EBITDA is the sum of revenue enhancement and cost savings
 - Price and volume expansions enhance revenues
 - Transport, Production, S&D,G&A, CO₂ and other costs reductions create savings
- Incremental FCFs are the sum of incremental EBITDA, incremental CIT and Invested Capital improvements / needs
- The expected synergies PV comprises those FCFs discounted





To complement the DCF from the valuation model, performing a Multiples analysis based on Trading and Transaction Comparables is also a common option for deriving the enterprise value



ABC should follow a standardized add-on model to conduct the analysis of Comparables and Multiples. Doing so will enable a meaningful benchmark against the DCF outcomes and showcase the ranges that EV can take



DATA SHEETS

- ABC should systematically apply a **complementary model** to the Valuation one, to analyse Trading and Transaction Comparables and extrapolate the enterprise value of the target
- The **Multiples Add-on Model** comprises two **Data Sheets**:
 - **Trading Comps**: maps all public companies in the cement business and implied multiples
 - **Transaction Comps**: maps previous M&A activity in the industry, including transaction value and implied multiples

Both sheets incorporate a **filtering option**: ABC should filter the data according to Country, EV, Capital Structure and Capacity, in order to arrive at a sample of comparable companies that are similar to the target

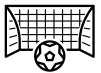


OUTPUTS SHEET

- The **Outputs Sheet** will then automatically compute the min., max. and average of the selected sample's multiples for these two valuation methods: Trading and Transaction Comparables
- Afterwards, to see how they stack against the **DCF multiples**, ABC should simply insert key financials from the Valuation Model and perform an EV sensitivity analysis, according to the template. As before, the min., max. and average for each multiple will be promptly estimated, and will appear under the DCF part

ABC can then consult the **summary tables** to get a comprehensive view of the range each multiple can take under the three valuation methods, as well as the implied range of EVs applying those same multiples

A Football Field is the optimal way of presenting and comparing the outcomes of different valuation methods. Thus, it has been incorporated in the Multiples Add-on Model, allowing a visual representation of the EV ranges

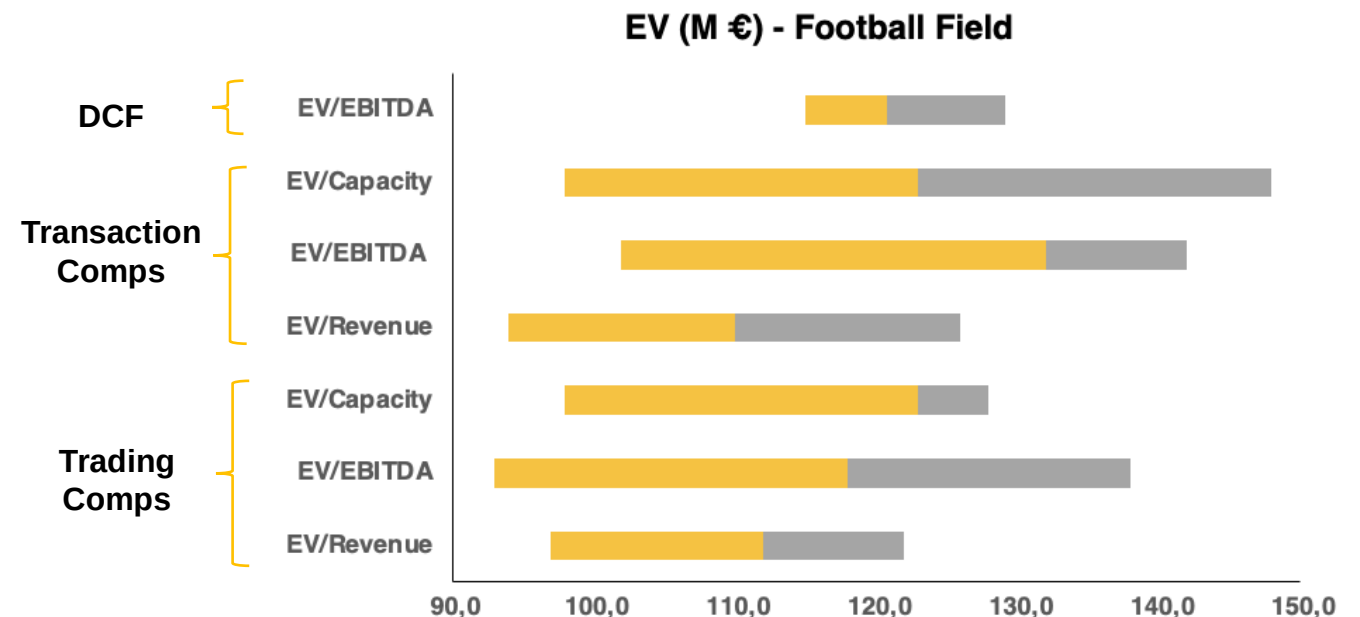


FOOTBALL FIELD

- A **football field** is a graph used to compare and summarize the results of **different valuation methodologies**
- It is prepared using a **floating bar chart** that comprises a **range of values for a company**, which is based on different valuation methods and assumptions
- We have seen how dependent on assumptions and forecasts the DCF valuation model is. Hence, to deal with uncertainty and reduce margin of error, analysts would benefit from a **comprehensive analysis** of several methods
- The best way of combining them and presenting how the different EV ranges and results stack against one another is precisely through a Football Field

Along with the multiples' summary tables, the Multiples Add-on Model also incorporates a **Football Field** graph in the Outputs Sheet, which provides a visual representation of how the target's EV fluctuates for each multiple under each valuation method

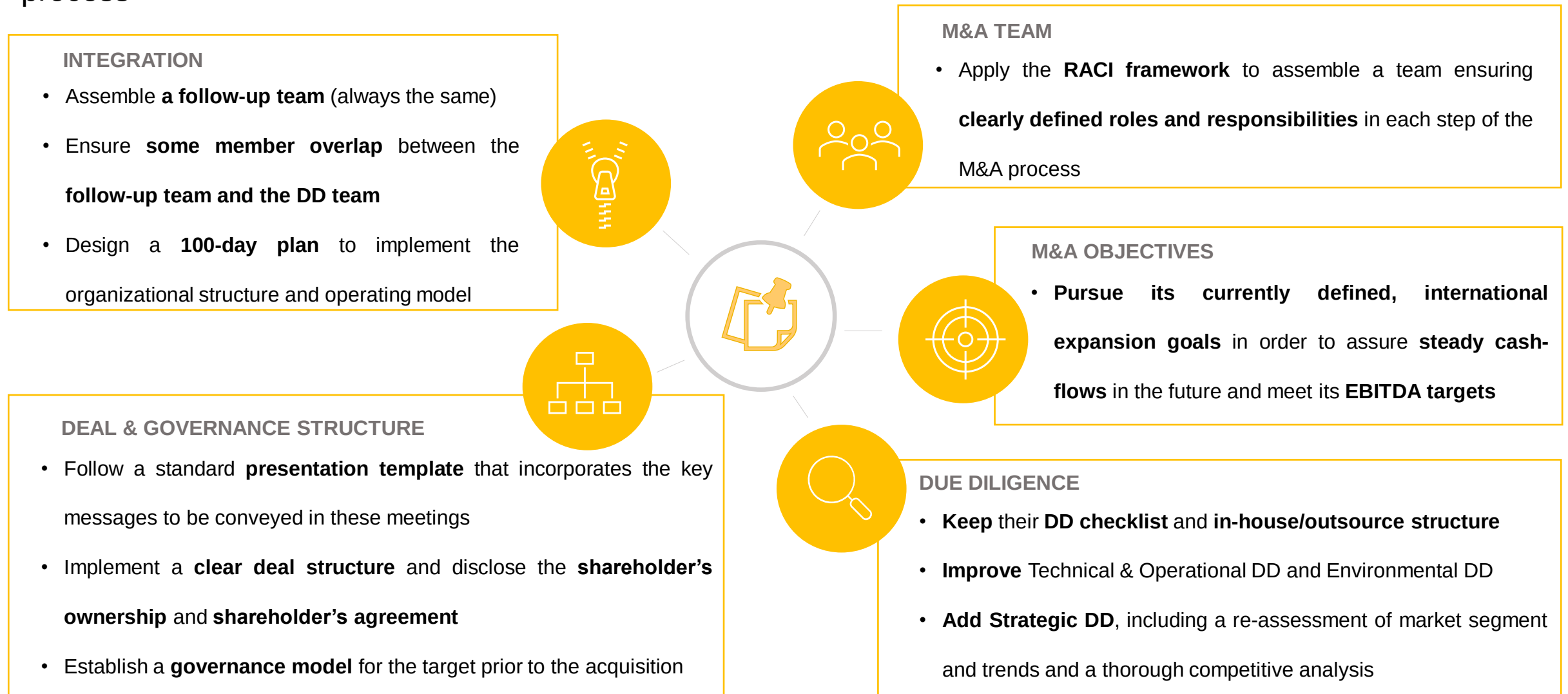
Graph 6 – Illustrative EV Football Field for several multiples under the 3 valuation methods (the orange column goes from min to average EV, while the grey one from average to max EV)



5. SUMMARY OF RECOMMENDATIONS

SUMMARY OF RECOMMENDATIONS

By following these recommendations, ABC will be able to maximize the efficiency of its M&A decision-making process



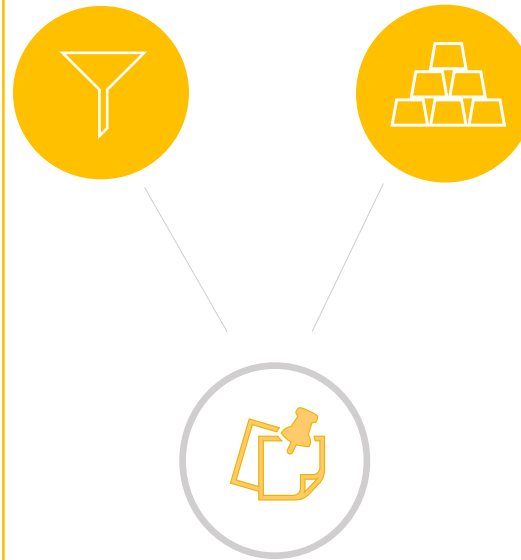
SUMMARY OF RECOMMENDATIONS

By following these recommendations, ABC will be able to maximize the efficiency of its M&A decision-making process

TARGET SCREENING

ABC should define a clear **standardized methodology** to select acquisition targets:

1. Structure its selection criteria by **market and company** attractiveness, in order to identify immediate and potential acquisition opportunities
2. Define a standard set of indicators to primarily **exclude unsuitable** markets from the analysis
3. **Prioritize** non-excluded markets based on key indicators
4. Apply the **same procedure to companies** located in the selected markets
5. Allocate each one to **Action/Watch** list, based on the feasibility of the deal

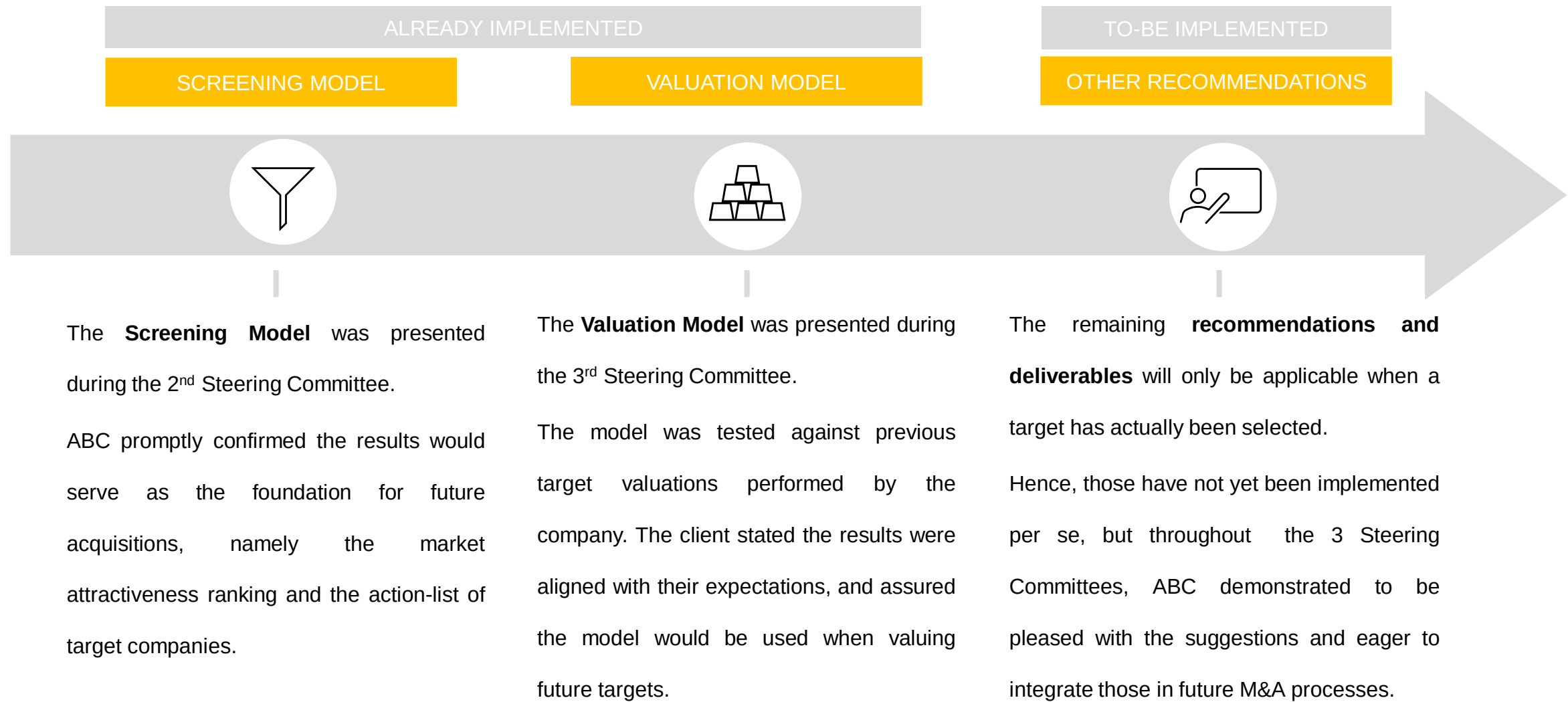


VALUATION

To value a target ABC should conduct: 1) a **DCF** analysis; and 2) a **Comparables** analysis

1. Create a clearly **defined and systemized** model with five parts / sheets: i) Read Me; ii) Historical Data; iii) Inputs; iv) Financials; and v) Synergies
2. Construct two sheets, as complete as possible, with the data regarding **precedent transactions** and **trading comparable** companies. Later, use those sheets to arrive at a sample of comparable companies that are similar to the target.

Both the Screening and Valuation Model are already embedded in ABC's M&A process. The remaining recommendations will be implemented once a real target has been selected



6. REFERENCES

REFERENCES (I/VII)

Introduction

- Porter, Michael. 1979. "How Competitive Forces Shape Strategy." Harvard Business Review. March 1979. <https://hbr.org/1979/03/how-competitive-forces-shape-strategy>.
- Corporate Finance Institute. "SCQA." Corporate Finance Institute. <https://corporatefinanceinstitute.com/resources/careers/how-to-job-guides/scqa/>.
- Corporate Finance Institute. 2017. "SWOT Analysis - Learn How to Conduct a SWOT Analysis." Corporate Finance Institute. 2017. <https://corporatefinanceinstitute.com/resources/knowledge/strategy/swot-analysis/>.
- Rosenbaum, Joshua, and Joshua Pearl. 2018. Investment Banking. Hoboken Wiley.
- Brealey, Richard A, Stewart C Myers, and Franklin Allen. 2020. Principles of Corporate Finance. New York, Ny Mcgraw-Hill Education.

Internal Analysis

- McKinsey. 2008. "Enduring Ideas: The 7-S Framework." McKinsey & Company. March 1, 2008. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/enduring-ideas-the-7-s-framework#>.

External Analysis

- ECO. 2021. "Consumo de Cimento Aumenta 10,6% Em 2020 Para Recorde Desde 2011." ECO. March 3, 2021. <https://eco.sapo.pt/2021/03/03/consumo-de-cimento-aumenta-106-em-2020-para-recorde-desde-2011/>.

REFERENCES (II/VII)

- “Global High Performance Cement Market Analysis | Size.” 2020. Global Market Estimates Research & Consultants. 2020. <https://www.globalmarketestimates.com/market-report/high-performance-cement-market-3390>.
- Cimentar. 2021. “ROTEIRO PARA a NEUTRALIDADE CARBÓNICA 2050.” <http://www.atc.pt/wp-content/uploads/2021/03/Roteiro.pdf>.
- Corporate Finance Institute. 2017. “SWOT Analysis - Learn How to Conduct a SWOT Analysis.” Corporate Finance Institute. 2017. <https://corporatefinanceinstitute.com/resources/knowledge/strategy/swot-analysis/>.
- Cementir Holding. “The Cement Sector and the Challenges of Sustainability | Cementir Holding N.V.” [Www.cementirholding.com. https://www.cementirholding.com/en/sustainability/sustainability/cement-sector-and-challenges-of-sustainability](https://www.cementirholding.com/en/sustainability/sustainability/cement-sector-and-challenges-of-sustainability).
- Banco De Portugal. “Séries Estatísticas | BPstat.” [Bpstat.bportugal.pt. https://bpstat.bportugal.pt/dados/series?mode=graphic&svid=f6W_AAAAAA.!!B!C!10!!!False!24!1iPVNa:FUUEDfCcJK1Zno2V0IGNPYBsouk&series=12559743](https://bpstat.bportugal.pt/dados/series?mode=graphic&svid=f6W_AAAAAA.!!B!C!10!!!False!24!1iPVNa:FUUEDfCcJK1Zno2V0IGNPYBsouk&series=12559743)
- Birshan, Michael. 2015. “The Cement Industry at a Turning Point: A Path toward Value Creation | McKinsey.” [Www.mckinsey.com. McKinsey. December 1, 2015. https://www.mckinsey.com/industries/chemicals/our-insights/the-cement-industry-at-a-turning-point-a-path-toward-value-creation](https://www.mckinsey.com/industries/chemicals/our-insights/the-cement-industry-at-a-turning-point-a-path-toward-value-creation).
- ZKG. 2020. “China’s Cement Industry under the Belt and Road Initiative - Cement Lime Gypsum.” [Www.zkg.de. 2020. https://www.zkg.de/en/artikel/zkg_China_s_cement_industry_under_the_Belt_and_Road_Initiative_3535164.html](https://www.zkg.de/en/artikel/zkg_China_s_cement_industry_under_the_Belt_and_Road_Initiative_3535164.html).

REFERENCES (III/VII)

- Laubier, Romain de, Arne Burfeind, Yvonne Zhou, and Philipp Heck. 2020. “The Trillion-Dollar Plan for the New Silk Road.” BCG Global. August 21, 2020. <https://www.bcg.com/publications/2018/trillion-dollar-plan-new-silk-road>.
- Cembureau (The European Cement Association). Review of Cementing the European Green Deal- Reaching Climate Neutrality along the Cement and Concrete Value Chain by 2050. Cembureau. http://www.atc.pt/wp-content/uploads/2020/05/cembureau-2050-roadmap_final-version_web-1.pdf.
- J.P.Morgan. 2020. “Global Cement Insights.”

M&A Process

- UN Climate Technology Center & Network. 2016. “CCS from Cement Production.” Climate Technology Centre & Network. November 8, 2016. <https://www.ctc-n.org/technologies/ccs-cement-production>.
- Espinha, Roberto. 2016. “Matriz RACI Ou Matriz de Responsabilidades, O Que é E Como Fazer.” Artia. March 30, 2016. <https://artia.com/blog/matriz-raci-o-que-e-a-matriz-de-responsabilidades/>.
- Holcim. <https://www.holcim.com/>.
- Heidelberg Cement Group. <https://www.heidelbergcement.com/en>.

REFERENCES (IV/VII)

- Orbis. <https://orbis.bvdinfo.com/version-20211118/orbis/1/Companies/Search>.
- Bloomberg. <https://www.bloomberg.com/europe>.
- Christensen, Clayton, Richard Alton, Curtis Rising, and Andrew Waldeck. 2016. "The Big Idea: The New M&a Playbook." Harvard Business Review. January 29, 2016. <https://hbr.org/2011/03/the-big-idea-the-new-ma-playbook>.
- Miles, Laura, Adam Borchert, and Alexandra Ramanathan. "Some Outperformers Justify Higher Targets Because They Know How to Achieve Them." https://www.bain.com/contentassets/1800162363584429af8134bf29679837/bain_brief_why_some_merging_companies_become_synergy_overachievers.pdf.
- BCG. "The Art of Successful Acquisition How BCG Supports M&a Strategy and Target Search." Boston Consulting Group. https://image-src.bcg.com/Images/Buy-Side_Brochure_DS_17092019_DIGITAL_tcm9-237558.pdf.
- Corporate Finance Institute. 2018. "Comparable Company Analysis." Corporate Finance Institute. 2018. <https://corporatefinanceinstitute.com/resources/knowledge/valuation/comparable-company-analysis/>.
- Chen, James. 2020. "Comparable Company Analysis (CCA) Definition." Investopedia. 2020. <https://www.investopedia.com/terms/c/comparable-company-analysis-cca.asp>.

REFERENCES (V/VI)

- Metha, Sher. 2021. "Football Field." Financial Edge. May 28, 2021. <https://www.fe.training/free-resources/valuation/football-field/>.
- Downs, Brandon. 2019. "Due Diligence in Mergers and Acquisitions." Business Benefits Group. April 15, 2019. <https://www.bbgbroker.com/due-diligence-in-mergers-and-acquisitions/>.
- Corporate Finance Institute. 2019. "Due Diligence - Overview of Due Diligence in an M&a Transaction." 2019. Corporate Finance Institute. 2019. <https://corporatefinanceinstitute.com/resources/knowledge/deals/due-diligence-overview/>.
- Global Cement. 2018. "Due Diligence in the Cement Sector: An Art." Wwww.globalcement.com. November 1, 2018. <https://www.globalcement.com/magazine/articles/1081-due-diligence-in-the-cement-sector-an-art>.
- Sarrazin, Hugo, and Andy West. 2011. "Understanding the Strategic Value of IT in M&A." McKinsey & Company. 2011. <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/understanding-the-strategic-value-of-it-in-m-and-38a>.
- Speer, Chris. 2019. "Strategic Due Diligence Is the Foundation for Deal Success." Utah Business. August 13, 2019. <https://www.utahbusiness.com/strategic-due-diligence/>.
- Booz Allen Hamilton. 2021. "Strategic Due Diligence Methodology." 2021. <https://www.strategy-business.com/media/image/enews092806-ex01b.gif>.

REFERENCES (VI/VII)

- Chen, James. 2021. "Sales and Purchase Agreement (SPA)." Investopedia. March 31, 2021.
<https://www.investopedia.com/terms/s/salesandpurchase.asp#examples-of-spas-in-the-marketplace>.
- Corporate Finance Institute. 2018. "M&a Process - Steps in the Mergers & Acquisitions Process." 2018. Corporate Finance Institute. 2018.
<https://corporatefinanceinstitute.com/resources/knowledge/deals/mergers-acquisitions-ma-process/>.
- Corporate Finance Institute. "M&a Deal Structure - Learn about How to Structure a Deal." n.d. Corporate Finance Institute.
<https://corporatefinanceinstitute.com/resources/knowledge/deals/ma-acquisition-deal-structure/>.
- LafargeHolcim. "Shareholders Information." 2018. LafargeHolcim Bangladesh Limited. March 11, 2018.
<https://www.lafargeholcim.com.bd/shareholders-information>.
- Holcim. "Lafarge and Cementos Molins Form a Joint Venture to Build the First Major Cement Plant in Bangladesh." 2017. Holcim.com. September 14, 2017. <https://www.holcim.com/lafarge-and-cementos-molins-form-a-joint-venture-build-first-major-cement-plant-bangladesh>.
- Chen, James. 2021. "Corporate Governance." Investopedia. July 4, 2021. <https://www.investopedia.com/terms/c/corporategovernance.asp>.
- CNMV. 2020. "INFORME ANUAL de GOBIERNO CORPORATIVO de LAS SOCIEDADES ANÓNIMAS COTIZADAS."
https://www.cemolins.es/uploads/media/E0-GCM/2-Accionistas-e-inversores/2-HECHOS-RELEV/IGC_2020.pdf.

REFERENCES (VII/VII)

- Galp. “Governance Model | Galp.” n.d. Www.galp.com. <https://www.galp.com/corp/en/corporate-governance/governing-model-and-bodies/governance-model>.
- Galp. “Shareholding Structure | Galp.” n.d. Www.galp.com. <https://www.galp.com/corp/en/investors/information-to-shareholders/shareholding-structure>.
- Deloitte. 2013. “Developing an Effective Governance Operating Model a Guide for Financial Services Boards and Management Teams.” <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Financial-Services/dttl-fsi-US-FSI-Developinganeffectivegovernance-031913.pdf>.
- DealRoom. 2021. “M&a Integration: Post-Merger Integration Process Guide.” Dealroom.net. December 7, 2021. <https://dealroom.net/faq/post-merger-and-acquisition-m-a-integration-process#faq-1>.
- BCG. “Post-Merger Integration.” BCG Global. <https://www.bcg.com/capabilities/mergers-acquisitions-transactions-pmi/post-merger-integration>.
- Capgemini Consulting. “The First 100 Days.” <https://www.capgemini.com/consulting-de/wp-content/uploads/sites/32/2017/08/the-first-100-days.pdf>.

7. APPENDIX



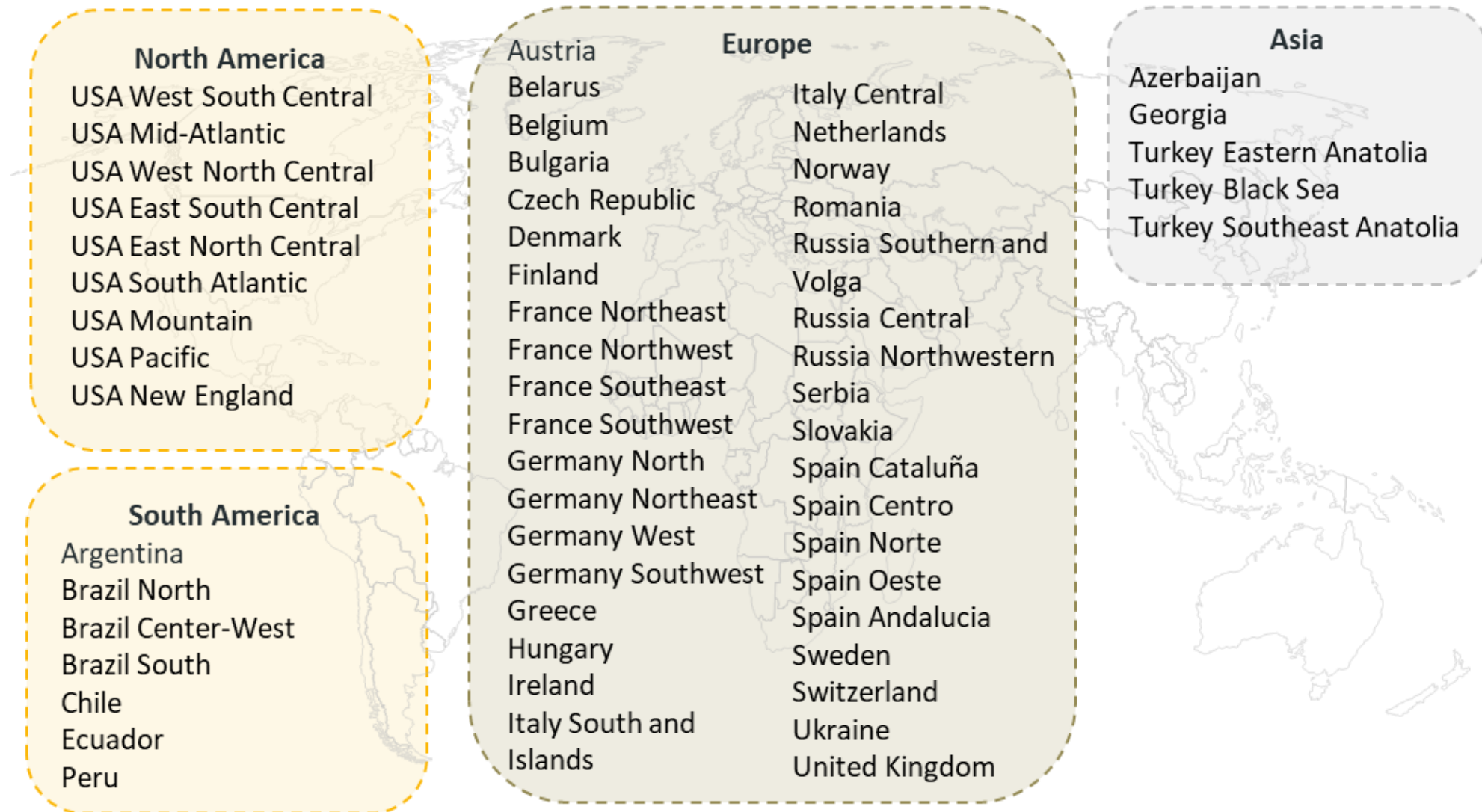
APPENDIX

INTERNAL ANALYSIS

	External Opportunities	External Threats
	1. Growth Prospects 2. Size Advantages	1. Industry Cyclicalities 2. Industry Concentration
Internal Strengths 1. Financial Performance 2. Business Model	• Its current financial results emphasize the company's ambition and ability to grow, thus capturing the growth opportunities of the industry • Furthermore, the company's business model is prepared to expand internationally to allow ABC thrive in the context of internationalization	• By exploring international M&A opportunities, ABC will be able to diversify its portfolio and thus mitigate the diversification risk associated with the industry's cyclicalities • Moreover, by growing inorganically, ABC will be able to compete with larger players by consolidating its position in across several geographies
Internal Weaknesses 1. Cashflow Dependence 2. Competitive Position	• By growing internationally, ABC will be able to reduce its cashflow dependence from the Portuguese market. • Moreover, as ABC increases its size inorganically, it will be able to benefit from a more competitive position as the company will enhance its reputation and exploit operational improvements through synergies	• By reducing its cashflow dependence on Portugal, ABC will have a more diversified portfolio to succeed in such a cyclical industry • Through M&A activities, ABC will establish a stronger market position and enhance its competitiveness, thus responding to the increasingly concentrated industry

APPENDIX

TARGET SCREENING



25% Market Growth (CAGR)
25% CRP/ HHI

Selected Markets	Score	Rank
Georgia	48,05	1
Ireland	45,14	2
Peru	43,50	3
Hungary	39,91	4
Slovakia	39,26	5
Romania	39,03	6
Serbia	38,27	7
Chile	38,07	8
Czech Republic	37,76	9
United States West South Central	36,54	10
United States Mid-Atlantic	36,54	10
United States West North Central	36,54	10
United States East South Central	36,54	10
United States East North Central	36,54	10
United States South Atlantic	36,54	10
United States Mountain	36,54	10
United States Pacific	36,54	10
United States New England	36,54	10
Bulgaria	36,50	19
Turkey Southeast Anatolia	36,20	20
Spain Oeste	35,21	21
United Kingdom	34,63	22
Spain Cataluña	34,51	23
Spain Norte	34,21	24
Spain Andalucía	34,15	25
Spain Centro	34,14	26
France Southwest	33,90	27
Sweden	33,85	28

Selected Markets	Score	Rank
France Southeast	33,70	29
France Northwest	33,66	30
France Northeast	33,44	31
Austria	32,92	32
Norway	32,78	33
Denmark	31,83	34
Belgium	31,57	35
Greece	31,43	36
Germany North	31,27	37
Germany Northeast	31,27	37
Germany West	31,27	37
Germany Southwest	31,27	37
Russia Northwestern	30,76	41
Switzerland	30,55	42
Brazil North	30,49	43
Turkey Eastern Anatolia	30,47	44
Turkey Black Sea	29,84	45
Finland	29,23	46
Brazil Center-West	28,38	47
Italy Central	28,03	48
Italy South and Islands	27,96	49
Russia Central	27,62	50
Russia Southern and Volga	27,29	51
Brazil South	25,57	52
Azerbaijan	23,67	53
Ukraine	19,28	54
Ecuador	17,91	55
Belarus	13,86	56
Argentina	10,48	57
Netherlands	7,04	58

25% Portfolio Diversification
10% Dilution OH Costs

10% Sustainability
5% Cultural Distance

Selected Markets	Score	Rank
Norway	34,48	1
Finland	33,88	2
Denmark	32,79	3
Germany North	30,11	4
Germany Northeast	30,11	4
Germany West	30,11	4
Germany Southwest	30,11	4
Austria	29,79	8
Sweden	29,72	9
Peru	29,35	10
United States West South Central	28,78	11
United States Mid-Atlantic	28,78	11
United States West North Central	28,78	11
United States East South Central	28,78	11
United States East North Central	28,78	11
United States South Atlantic	28,78	11
United States Mountain	28,78	11
United States Pacific	28,78	11
United States New England	28,78	11
Georgia	28,14	20
Belgium	27,94	21
United Kingdom	27,30	22
Romania	26,87	23
Chile	26,71	24
Brazil South	26,29	25
Argentina	25,81	26
Turkey Eastern Anatolia	25,74	27
Turkey Black Sea	25,74	27
Turkey Southeast Anatolia	25,74	27
Czech Republic	25,25	30
Ecuador	24,80	31

Selected Markets	Score	Rank
Hungary	24,74	32
Serbia	22,22	33
Azerbaijan	21,26	34
Russia Southern and Volga	20,85	35
Russia Central	20,85	35
Russia Northwestern	20,85	35
Slovakia	20,73	38
Ukraine	17,61	39
Switzerland	17,55	40
Brazil North	16,39	41
Brazil Center-West	16,39	41
Bulgaria	16,30	43
Belarus	16,08	44
Ireland	14,54	45
France Northeast	13,97	46
France Northwest	13,97	46
France Southeast	13,97	46
France Southwest	13,97	46
Netherlands	11,71	50
Spain Cataluña	10,39	51
Spain Centro	10,39	51
Spain Norte	10,39	51
Spain Oeste	10,39	51
Spain Andalucía	10,39	51
Italy South and Islands	8,23	56
Italy Central	8,23	56
Greece	8,20	58

1) Ease of Doing Business

Source: <https://www.doingbusiness.org/en/rankings>

Last updated: December 2020

Methodology:

- Starting a business
- Dealing with construction permits
- Getting electricity
- Registering property
- Getting credit
- Protecting minority investors
- Paying taxes
- Trading across borders
- Enforcing contracts
- Resolving insolvency

See detailed methodology here:

https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402_Ch06.pdf

2) Countries at War

We gathered information from distinct sources in order to define with countries are currently at war (1), being it civil war, terrorist attacks etc, and those which are not (0).

Sources used:

<https://worldpopulationreview.com/country-rankings/countries-currently-at-war>

<https://www.statista.com/chart/21652/countries-with-armed-clashes-reported/>

<https://fragilestatesindex.org/excel/>

3) Production VS Consumption & HHI

Source: Cemnet

Last updated: June 2021

Step 1: Determine which markets had a consumption higher than production. All those were immediately greelighted in terms of this criteria as it meant that there was space in that market for investment, either to increase production or efficiency.

Step 2:

If the 1st step wasn't complied with, the HHI was computed as the sum of the squared Market Shares (based on capacity) of each group, operating in the same Market. Then, that value was multiplied by 10 000 to have the most known measure, the squared HHI. All values below 2 500 were then excluded.

1) Country Risk Premium

Source: <https://pages.stern.nyu.edu/~adamodar/>

Last updated: July 2021

Using Damodaran's latest estimates the country risk premiums gave an indication of the marginal risk of operating in a specific country vis a vis working in a risk-free country.

To estimate the long-term country market risk premium, start with a default spread, which can be computed in two different manners:

- (1) use the LCU sovereign rating and assess the default spread for that rating versus a default free government bond rate
- (2) commence with the CDS spread of a certain country and deduct the US CDS spread. The result is the country spread.

2) Market Size and Growth

Step 1: Gather Market Size Data

- Collected at country level, from 2010 to 2020 (**Source:** Cemnet, last updated June 2021)
- For the countries split into several individual markets, the **sources** are:
 - Brazil (<https://abcp.org.br/vendas-de-cimento-crescem-11-em-2020/>)
 - France (<https://www.infociments.fr/chiffres-cles>)
 - Germany (computed manually, with Cemnet data)
 - Italy (https://www.federbeton.it/Portals/0/pubdoc/pubblicazioni/Rapporti/Federbeton_Rapporto_di_Filiera_2019.pdf)
 - Russia (<https://soyuzcem.ru/analitika#!/tab/96509298-2>)
 - Spain (Previous Project from ABC)
 - Turkey (<https://www.turkcimento.org.tr/en/statistics/sales-by-destinations>)
 - United States (<https://www.usgs.gov/centers/nmic/cement-statistics-and-information>)

Step 2: Estimate Market Growth (2020-2025)

- Real GDP forecasts were used as a proxy for the expected behaviour of the cement market in each country, due to high correlation
- The market growth was estimated via the compounded annual growth rate (CAGR), that is based on the forecasted Real GDP annual growth rates from 2020 to 2025
- **Source:** World Economic Outlook October 2021- International Monetary Fund
(https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD)

Step 3: Find Market Size 2025

- Estimated by combining each country's expected CAGR with the 2020 cement market size

3) Dillution of Overhead Cost

Based on the **2016 McKinsey Report**, we deducted the following method to obtain the dillution of overhead costs based on the number of factories present in the same region:

OH total	N Factories	OH/Factory	Savings/Factory
0	0	0	0%
94	1	94,0	0%
110	2	55,0	41%
125	3	41,7	56%
140	4	35,0	63%
155	5	31,0	67%

Moreover, some assumptions were made, such as:

- 1) Each factory has 1Mtpy
- 2) There is one factory per region where ABC is present

4) Portfolio Diversification

Intra-Portfolio Correlation:

- Ranges from -1 to 1 (-100% to 100%)
- Measure of diversification based on the weighted average for all unique asset correlations in a portfolio
- **Formula:** $\sum_i \sum_j x_i x_j P_{ij}$, where x_i and x_j are weights of assets in portfolio and P_{ij} is the correlation coefficient between countries
- Purely from a diversification perspective, -1 (-100%) is the optimal value, as all diversifiable risk is mitigated

Methodology:

- **Compute ABC's current IPC**
 - Using 2020 portfolio weights (excluding Spain – terminals)
 - Using cement consumption per country (2010-2020) to assess the correlation
 - Assuming the new acquisition will generate 40M EBITDA (23% portfolio weight)
- **Measure the impact of adding an extra country to the portfolio on ABC's IPC**
 - The country that lowers the IPC the most (closest to -100%) will be ranked as the most attractive one in terms of portfolio diversification

5) Sustainability Report

Source: <https://dashboards.sdgindex.org/downloads>

Last updated: 2021

Methodology:

- No poverty
- Zero hunger
- Good health & Well being
- Quality education
- Gender Equality
- Clean Water & Sanitation
- Renewable Energy
- Decent Work & Economic Growth
- Industry, Innovation and infrastructure
- Reduced Inequalities
- Sustainable Cities and Communities
- Responsible Consumption and Production
- Climate Action
- Life below water
- Life on land
- Peace, justice and strong institutions
- Partnerships for the goals

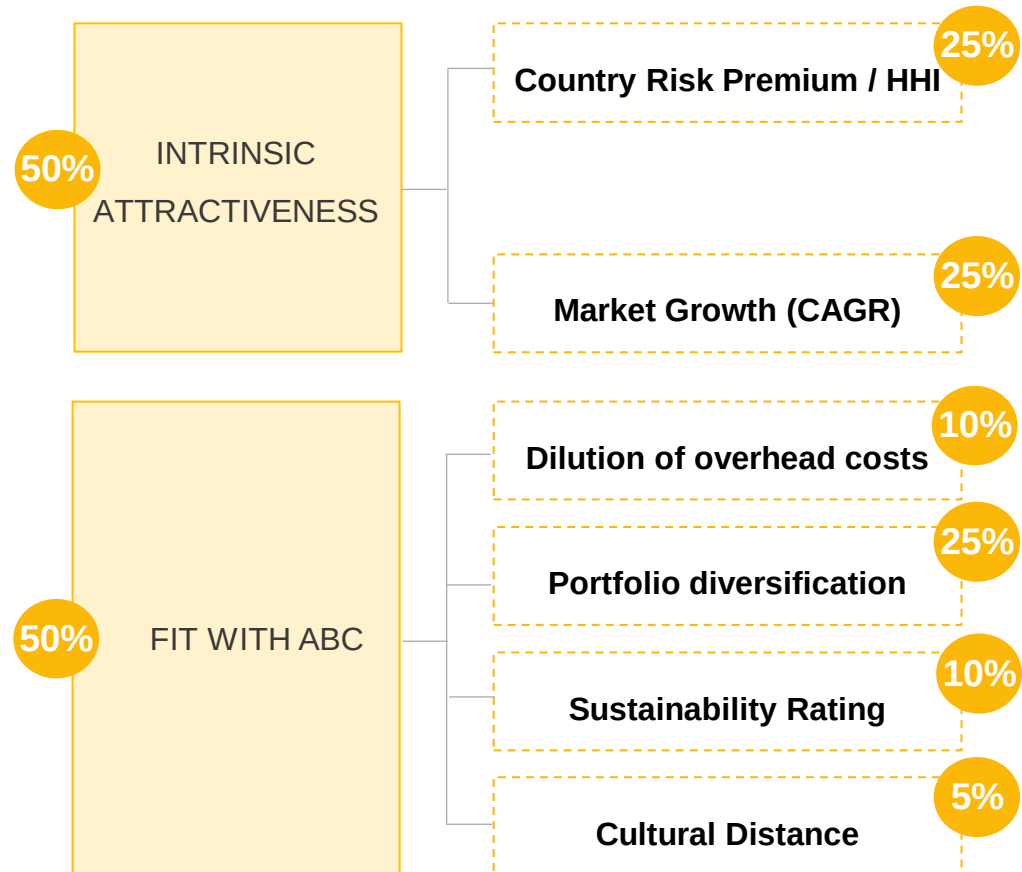
6) Cultural Distance

Source: <https://www.hofstede-insights.com/models/national-culture/>

- 1) **Power Distance** – How a society deals with social inequities. A low score indicates that people want to equalize power distribution and seek reason for power imbalances
- 2) **Individualism VS Collectivism** - Individualism occurs when people are exclusively responsible for themselves and their immediate families. Individuals might expect their family or members of a specific ingroup to look after them in exchange for unconditional devotion in a collectivist society.
- 3) **Masculinity VS Femininity** – Masculinity denotes a societal desire for accomplishment, heroism, assertiveness, and money incentives for success—in other words, greater competitiveness. Femininity, on the other hand, represents a propensity for collaboration, humility, compassion for the vulnerable, and high quality of life. The general public is more consensus-oriented.
- 4) **Uncertainty Avoidance** - the extent to which individuals of a society are uncomfortable with ambiguity and uncertainty
- 5) **Long term VS Short term orientation** – Low score: time-honored customs and conventions, with skepticism of society change. High scores indicate a more practical approach: they promote economy and diligence in modern schooling as a means of preparing for the future.
- 6) **Indulgence VS Restraint** - Indulgence refers to a culture that provides for the relatively unrestricted satisfaction of basic and natural human desires such as enjoyment of life and amusement. Restraint denotes a society that suppresses and restricts the satisfaction of desires through stringent social rules.

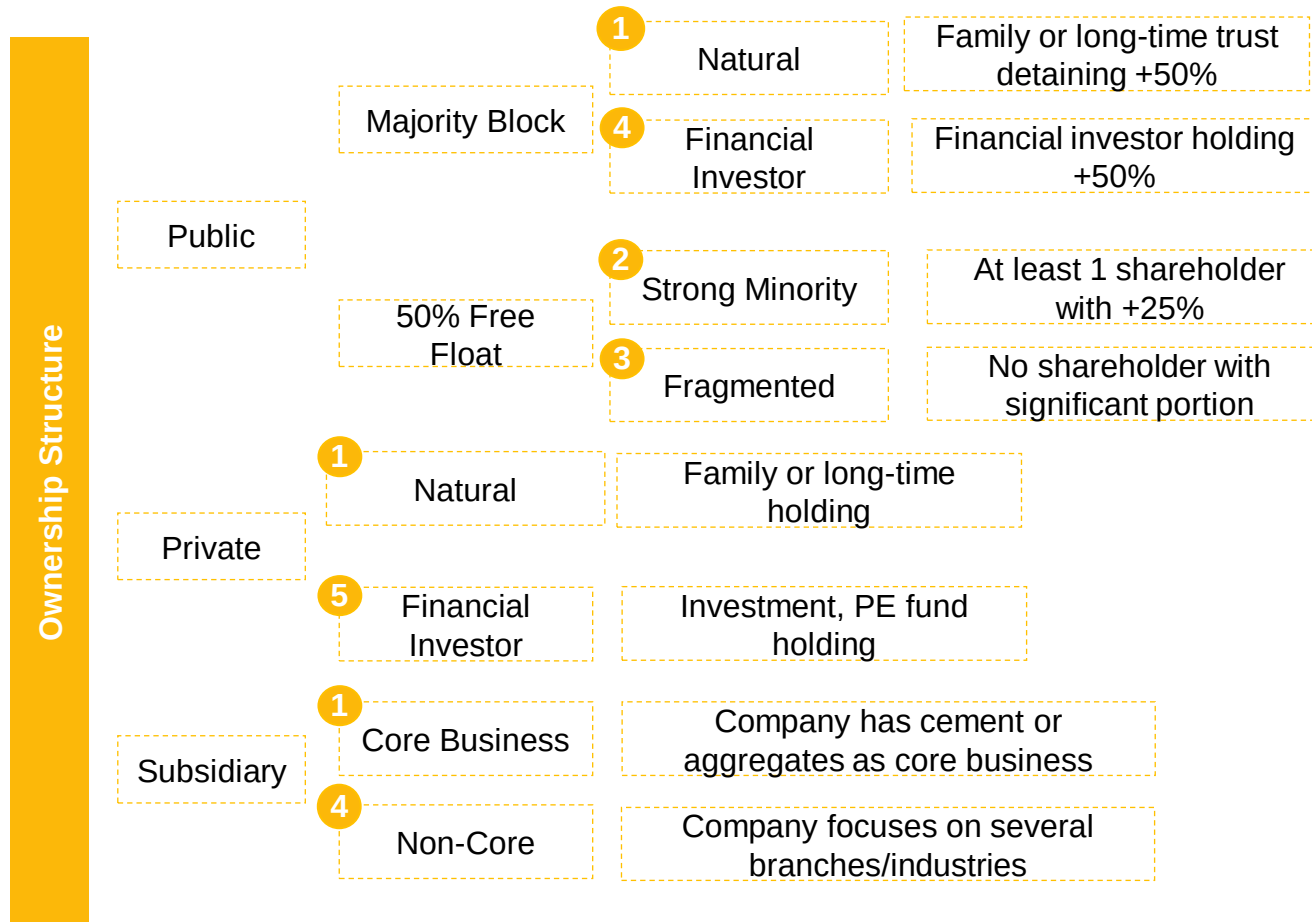
1) Market Attractiveness

The Market Attractiveness raking was computed in great detail during the Market section, nonetheless it is the result of two variables: Fit with Secil and Intrinsic attractiveness of the market.



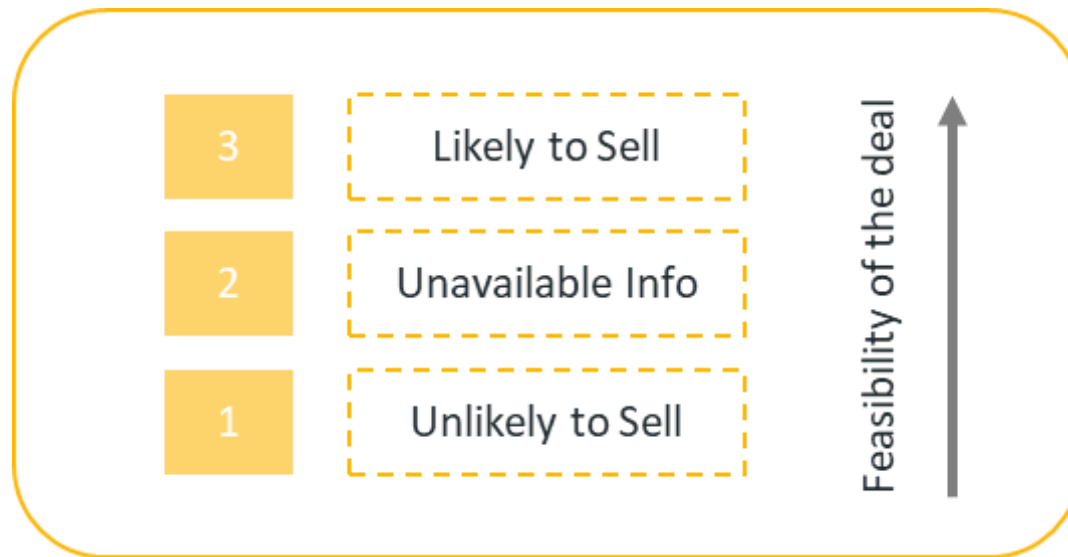
2) Ownership Structure

- Evaluates the shareholding structure, based on how it affects the feasibility of the deal
- Score ranges from 1 to 5, being 5 the most optimal structure, hence most feasible deal



3) Likelihood to Sell

- Measures company availability for sale, based on recent M&A activity, financial situation (distress signs) and other relevant news

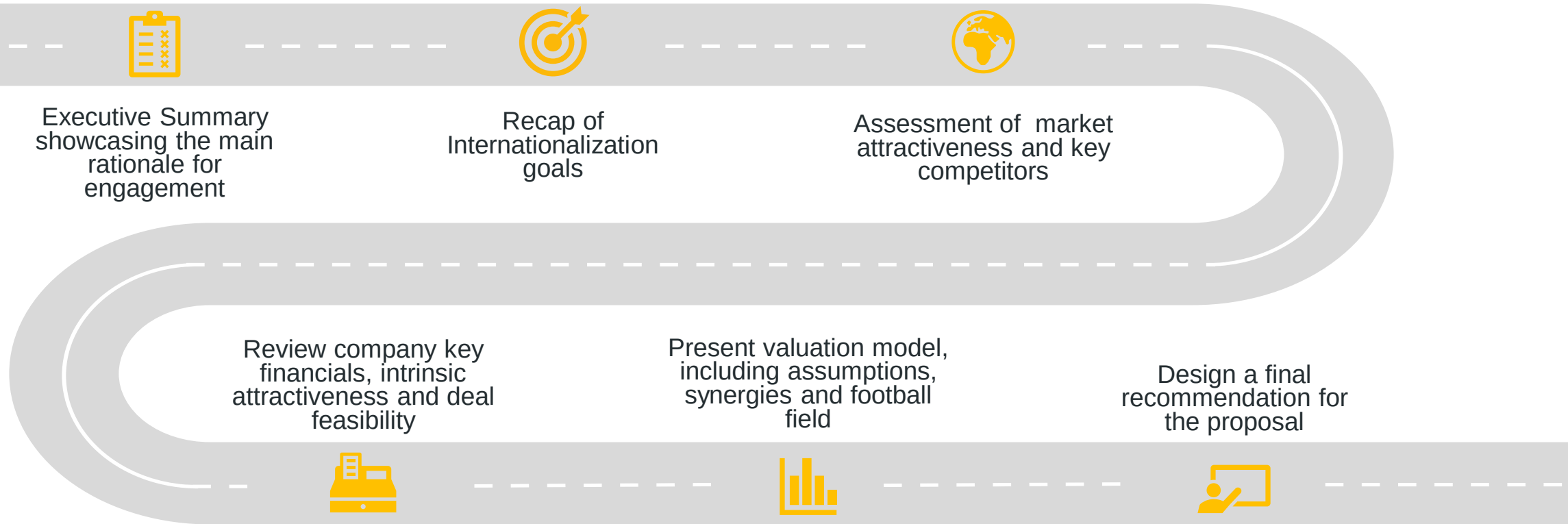


Company	Ownership Structure Score	Likeliness to Sell Score	Overall Score
Cia. de Cimento Itambé	100	50,5	150,5
Cemento Melón SA	75,25	50,5	125,75
Cementos Pacasmayo S. A.	75,25	50,5	125,75
Cementos Tudela Veguín S.A.	75,25	50,5	125,75
Portlandzementwerk Wittekind HugoMiebach Söhne KG	75,25	50,5	125,75
Keystone Cement Company	1	100	101
The Monarch Cement Company	50,5	50,5	101
CBB SA	25,75	50,5	76,25
Cemento Polpaico SA	75,25	1	76,25
Breedon Cement	1	50,5	51,5
Cemento Yura S.A.	1	50,5	51,5
Continental Cement Company, LLC	1	50,5	51,5
Martin Marietta Materials, Inc.	50,5	1	51,5
Povazska cementáren a.s.	1	50,5	51,5
Salt River Materials Group	1	50,5	51,5
CalPortland Company	1	1	2
Mitsubishi Cement Corporation	1	1	2
Norm Cement LLC	1	1	2

APPENDIX

DEAL & GOVERNANCE STRUCTURE

ABC should structure the presentation of selected targets to the Board following a clear and concise storyline
Index



Company X, which was valued at Y, requires an acquisition proposal of Z, allowing ABC to meet its internationalization objectives

Executive Summary



- Ambition 2025
- +40% EBITDA from M&A



- Market description
- Company description



- EBITDA
- Revenues
- CAPEX
- Production



- Synergies drivers
- Incremental EBITDA
- Synergies PV



- Investment proposal
- Timings

Leveraging ABC's strengths, the company has the means to achieve its 2025 Ambition of increasing its international presence

Recap of Internationalization goals



M&A Objectives

- Grow to an EBITDA of **200 M€** until 2025, from which **40 M€** prevenient from M&A operations
- Ultimately reduce exposure to Portugal to **<50%**

Market X has several characteristics that make it an attractive geography to be exploited by ABC

Market Description

Market Attractiveness

Market Size & Growth

Exp Market Size 2025

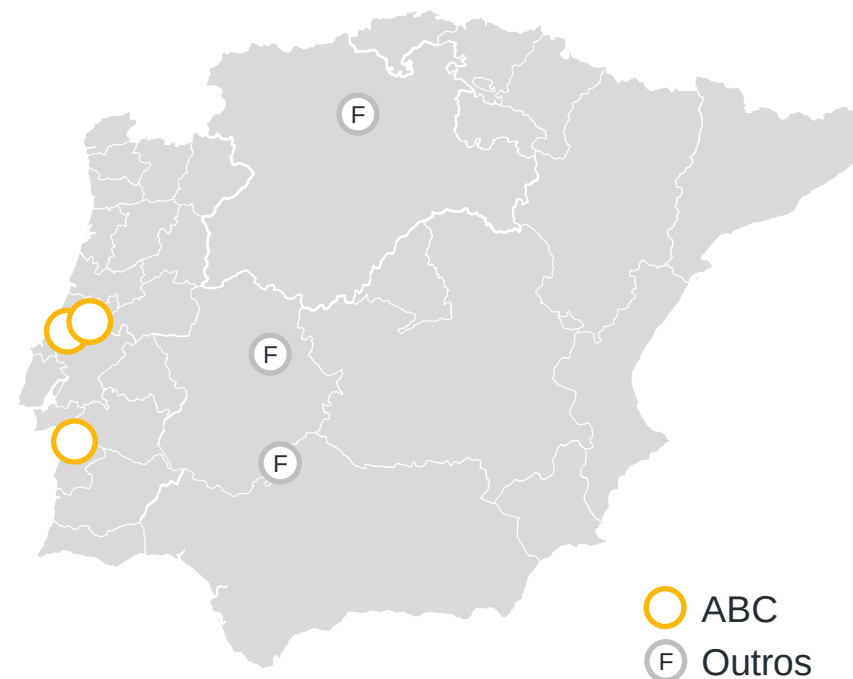
Market Growth (CAGR)

Intrinsic Attractiveness

Rankings

Fit w/ ABC

Final Rank



Competition

- HHI
- Main players in each market

ABC could leverage Company X's attractiveness to achieve its internationalization goals

Company Description

Company Overview

Production
Capacity

Breakdown by factory

Cement Sales
2020, 2021

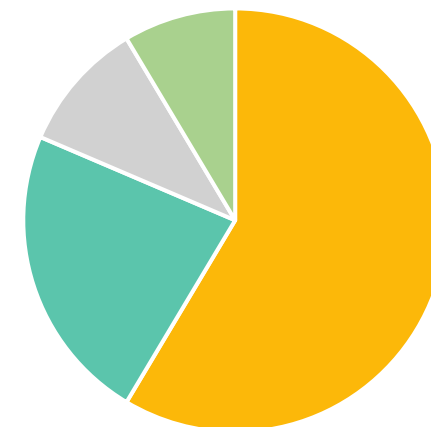
Intrinsic Attractiveness

Rankings

Feasibility of the deal

Final Rank

Market share



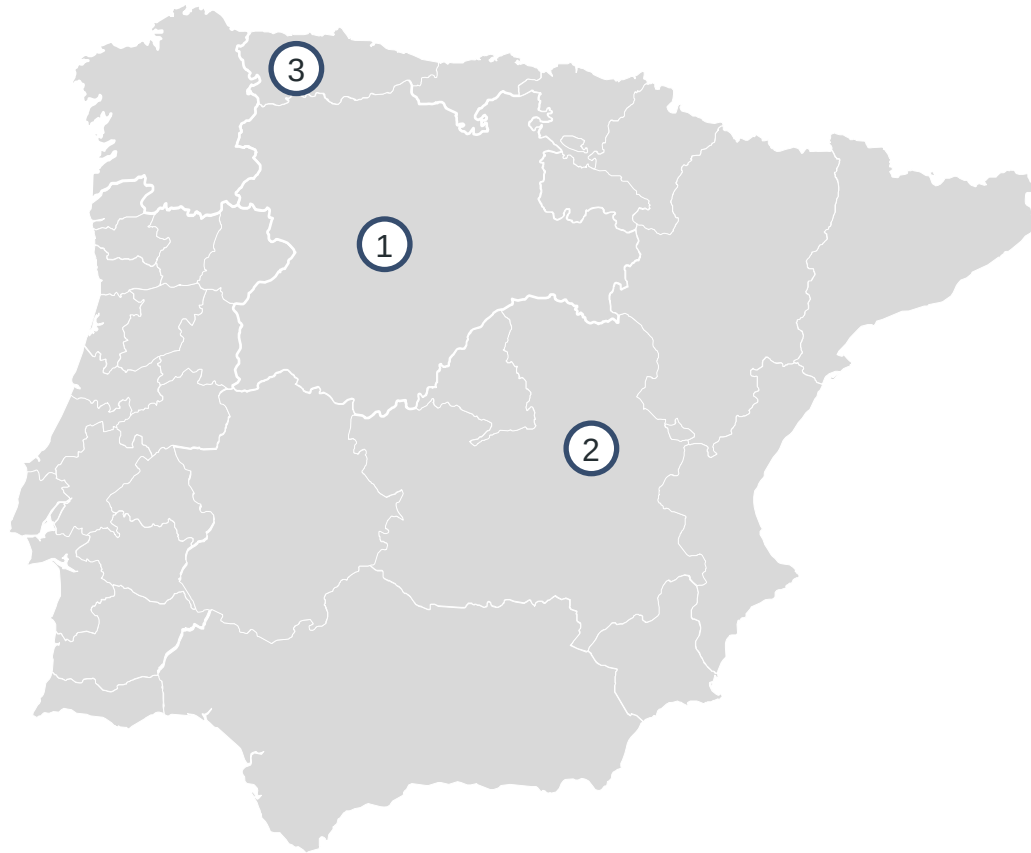
■ Target ■ Player 1 ■ Player 2 ■ Player 3

Market Share Assessment

Plug-in market share in every market where the company is present

There are several players interested in acquiring Company X which should be considered when analysing this opportunity

Interested Buyers



Rational

Company #1

Company #2

Company #3

The valuation model used followed several reasonable assumptions

Assumptions

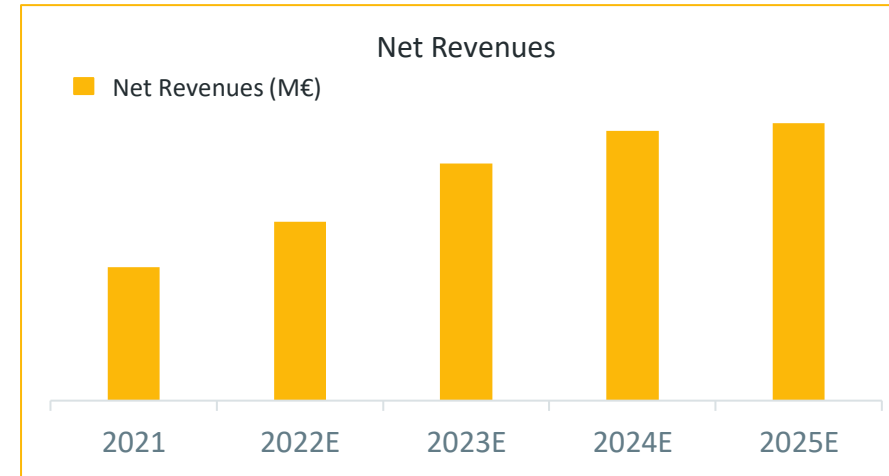
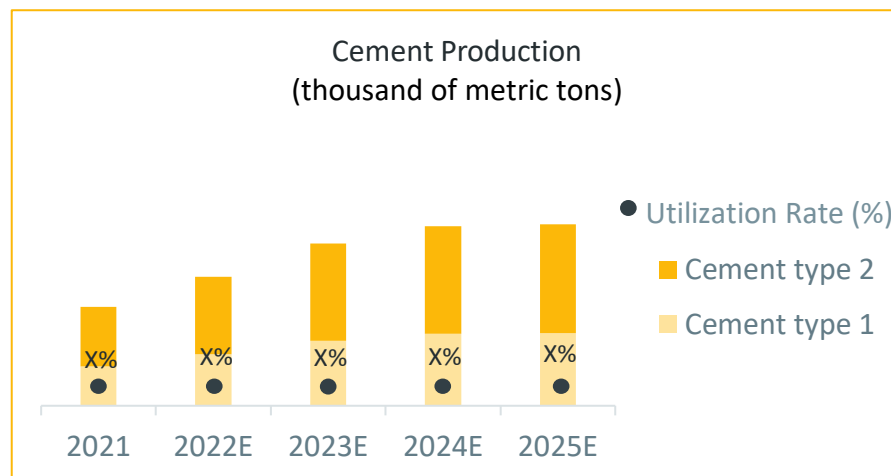
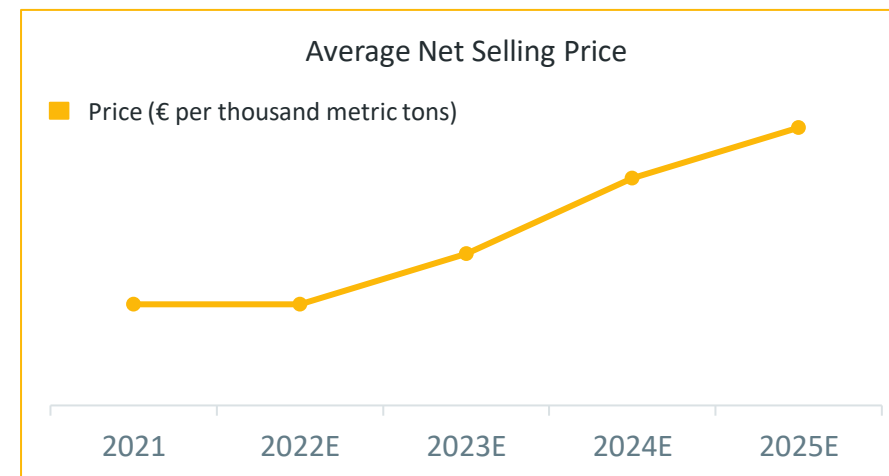
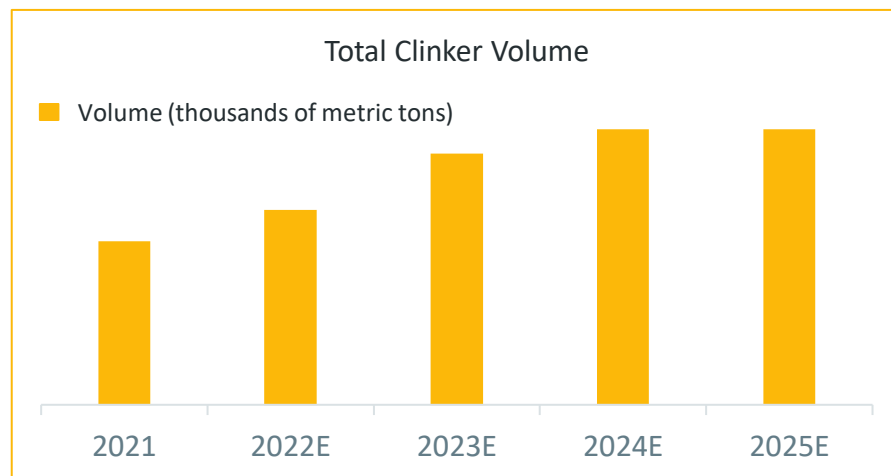


Main Valuation Model Assumptions

- **Macroeconomic indicators** for the US, Euro-Zone and the target's country of origin: population growth, GDP real and nominal growth, Inflation, Corporate Tax Rate, WACC
- **Sector indicators:** demand growth
- **Price growth reasoning**
- **Cost evolution reasoning**
- **CO2 Price/ton**
- **XXX**

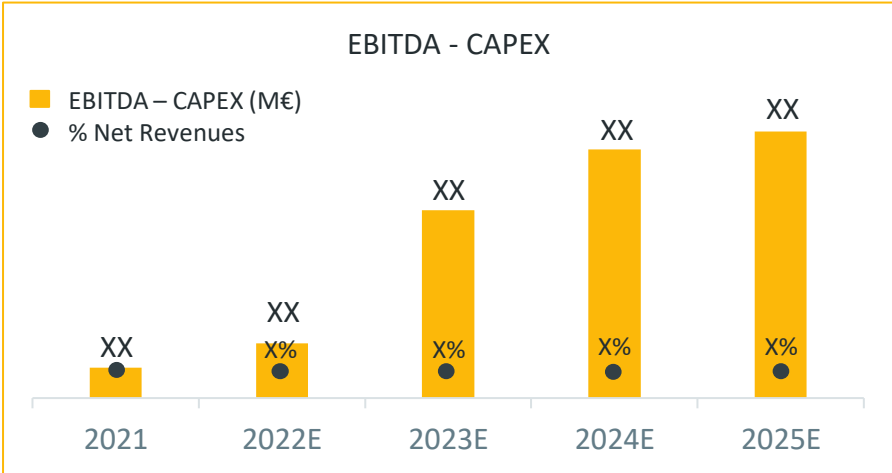
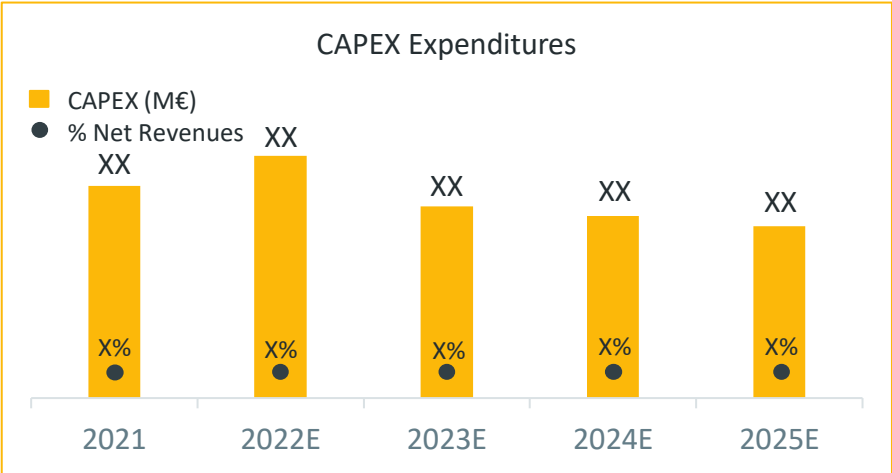
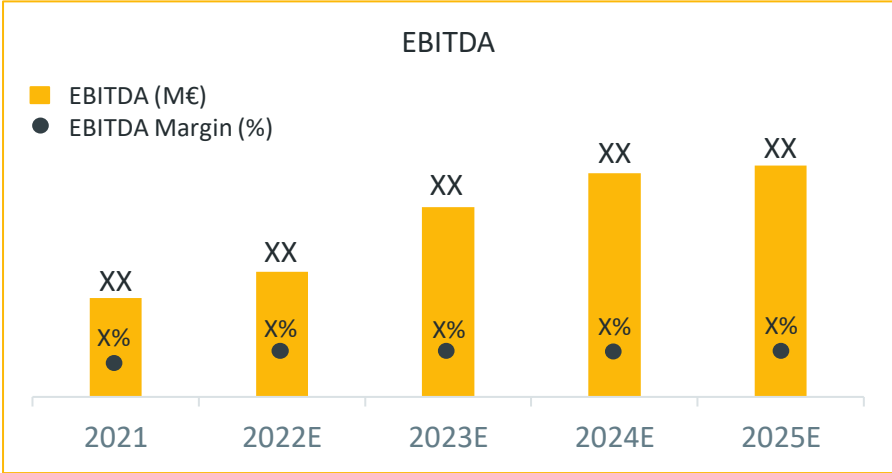
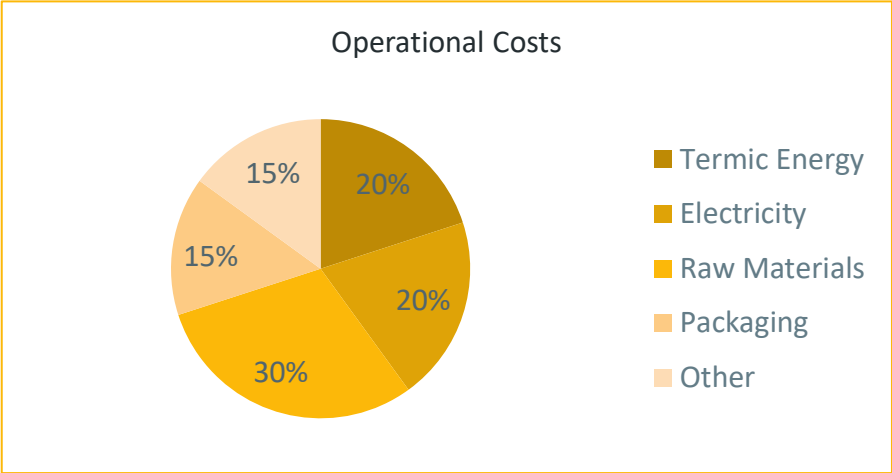
The financials of Company X, depict its robust financial position

Summary Financial Projections



The financials of Company X, depict its robust financial position

Summary Financial Projections



After performing the company valuation, we conclude that the standalone EV is between XX and YY

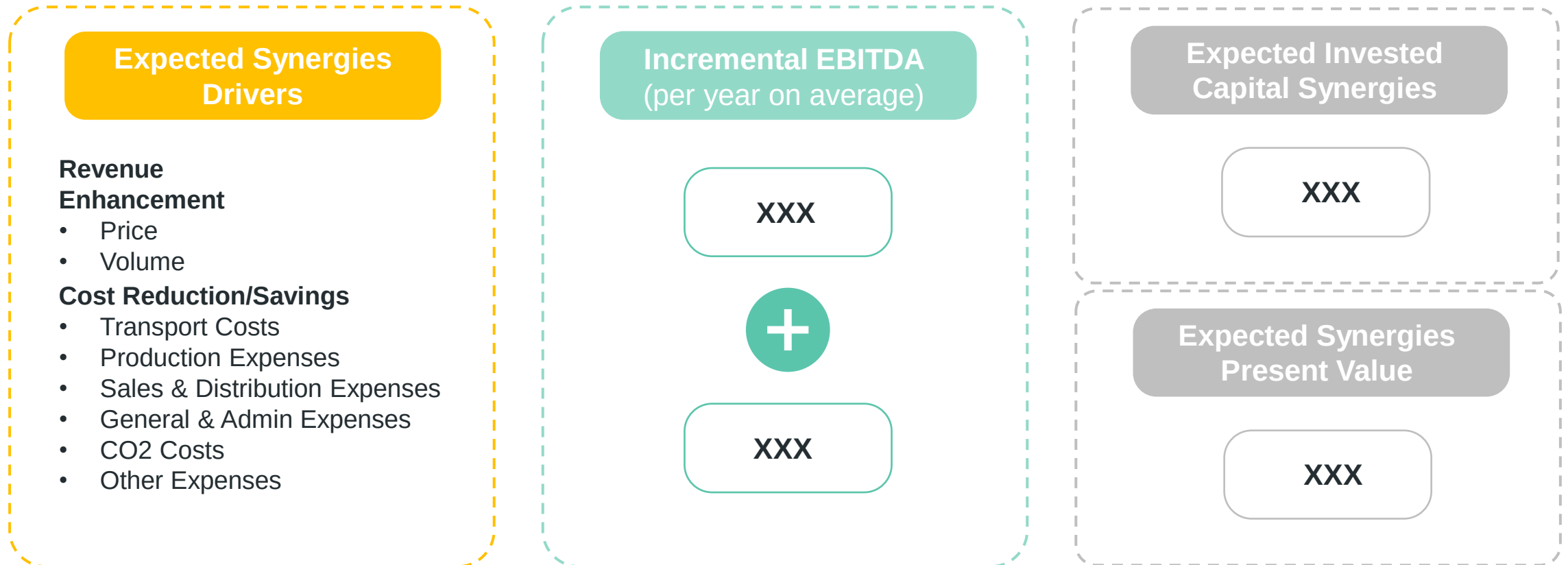
Standalone EV

Valuation (k€)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Cement Volume													
Op Revenues													
Net Revenues													
EBITDA													
EBIT													
(+)Tax on EBIT													
(=)NOPLAT													
(+)Change in invested capital													
(=) Free cash flow													
DCF													

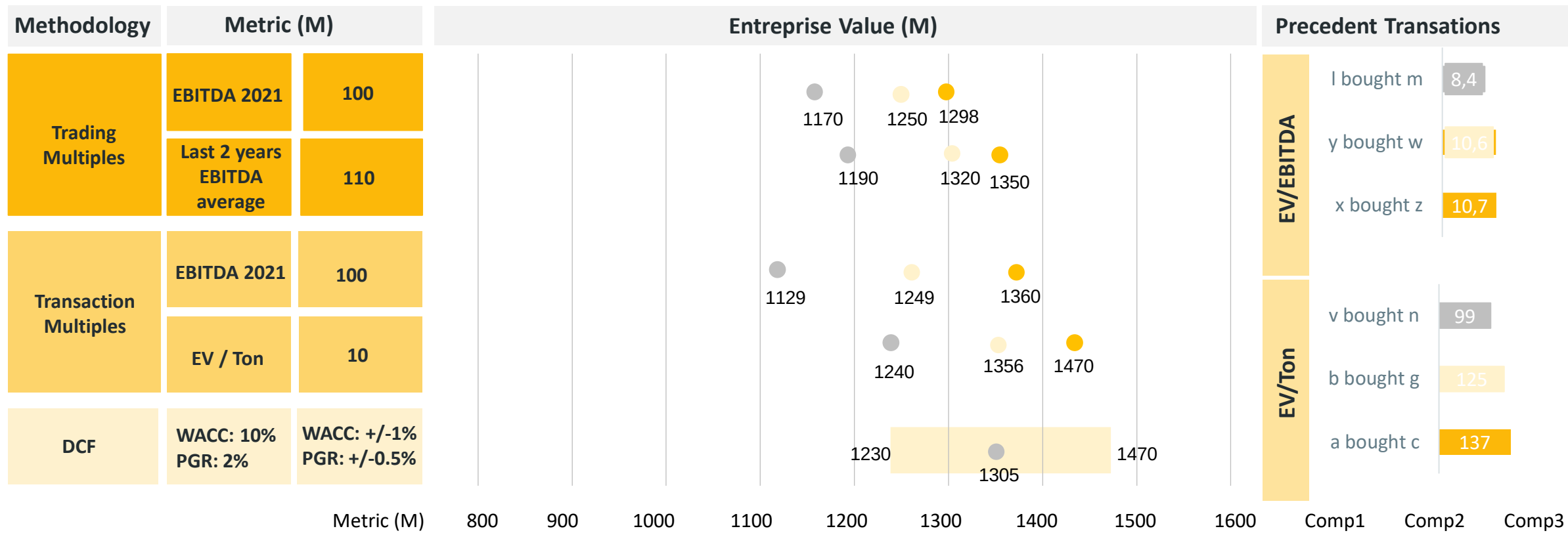
Enterprise value			
(=)Equity value			

Accounting for expected synergies the Enterprise Value may include an extra XX M

Synergies



As depicted on the Football Field, we believe the fair Enterprise Value should be around X to Y M



EV/EBITDA 2020

EV/EBITDA 2021

EV/EBIT 2020

EV/ EBIT 2021

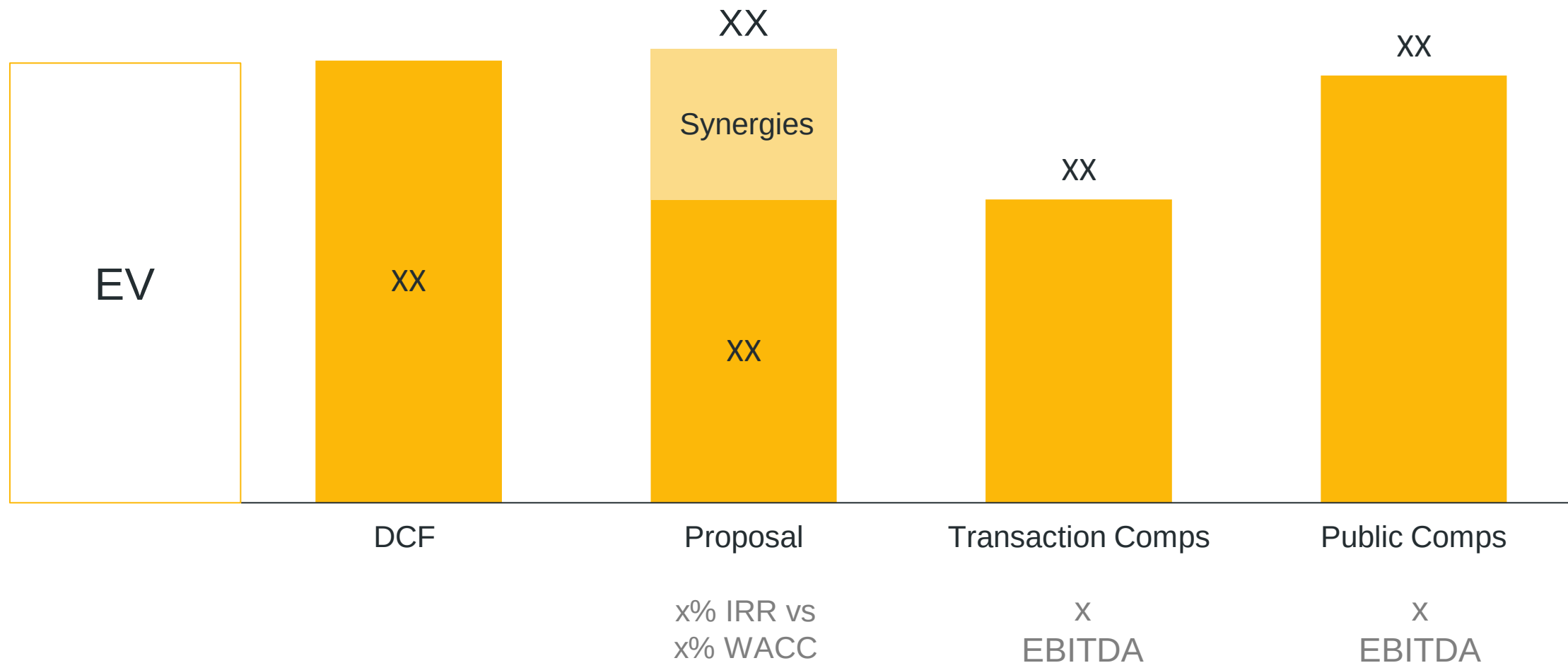
EV/ Ton

Besides critical transaction-specific risks, ABC has to take into account market, operations and regulation risks

Risks

	Risk	Relevance
Market	• Cement consumption evolution • Competitive response • Political risk • Exchange risk	
Operations	• Quantity and quality of raw materials • Transport logistics • Necessary licenses and permits for construction and operations	
Regulations	• Changes in CO2 emissions licenses regulation (price, quantity) • Tax risks (local tax on construction work, VAT formal invoicing requirements, ...)	
Transaction specifics	• Other potential buyers • Overpaying for target company • Due Diligence failed to highlight critical issues	

Based on the performed DCF valuation and Comparables analysis, and also considering the previously mentioned risks, Secil should make an offer of X
Offer Proposal



Going forward with this acquisition, the next step is ...

Next Steps

