

Mapei, Italy – Economic benefits of standards – Case Study

September 2011 – June 2012

Content of this presentation

- Mapei, Italy – Basic company information
- Production of chemicals & Mapei's value chain
- Use of standards at Mapei
- Quantification of the impacts of standards
- Additional qualitative considerations

Mapei, Italy – Company overview (1)

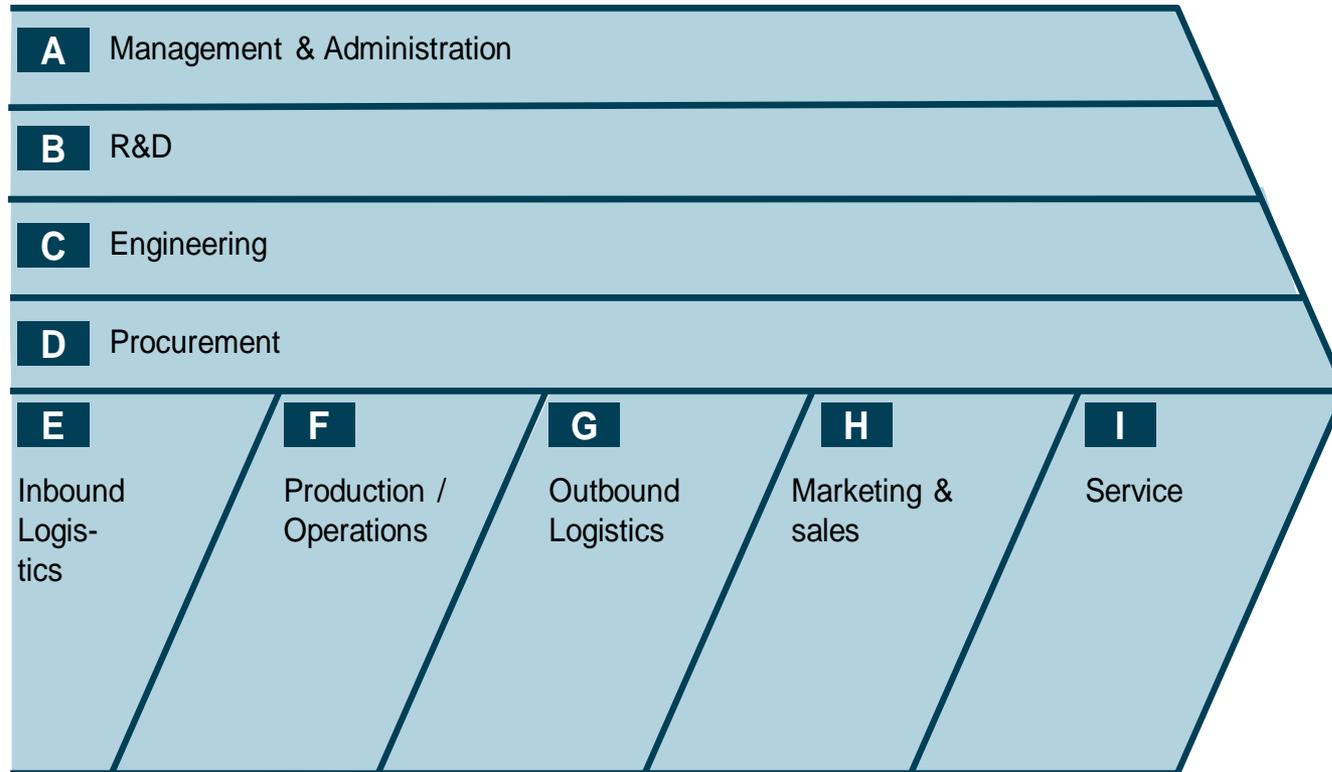
- The company was founded in 1937, to produce rendering and plastering mortars and wall coverings, and, in particular, varnishes and waterproofing products for the construction sector
- During the 1960s, in parallel with the growth of the Italian flooring and ceramic tile industry, the company developed adhesive materials to make tile installation faster and more secure
- Following the world ceramic tile industry boom in the 1980s, Mapei developed new manufacturing plants and acquired new companies in Europe, North America and elsewhere to serve the needs of local markets and reduce shipping costs and widened its range of building products
- Today, the Mapei Group is the world's leading manufacturer of products for the building industry

Baltika Breweries – Company overview (2)

In 2010	Description
Composition:	
# of subsidiaries	68
# of research and development centres	18
# of production facilities in operation	60 (in over 27 countries on the 5 continents)
Total group revenue	EUR 1.8 billion

- The company places great emphasis on research and development. Today, its main R&D efforts are directed at developing innovative and eco-sustainable and environmentally friendly products

Model of a company value chain (M. Porter)

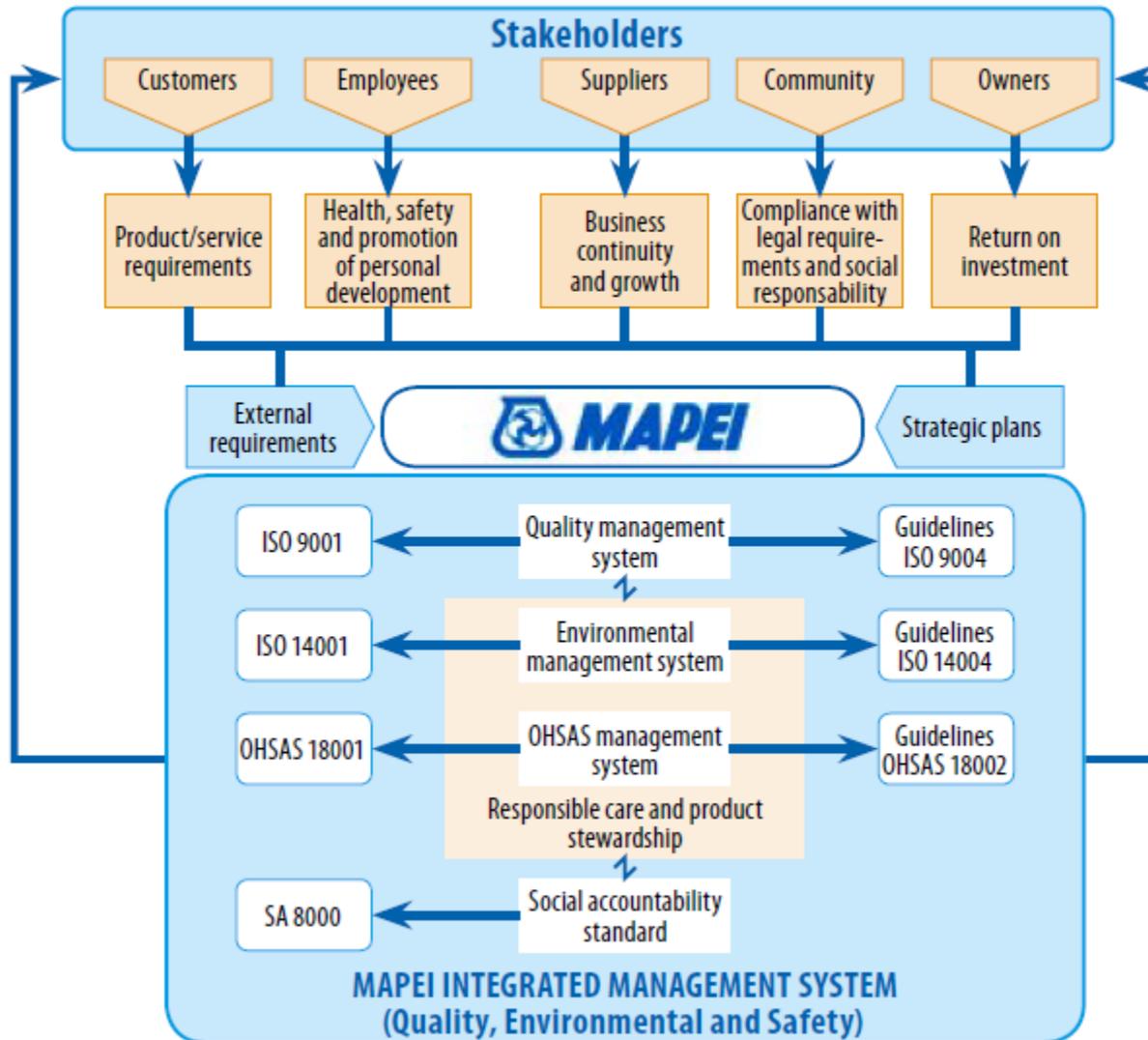


The “value chain” is used as a tool in the assessments to structure and analyze the activities of companies

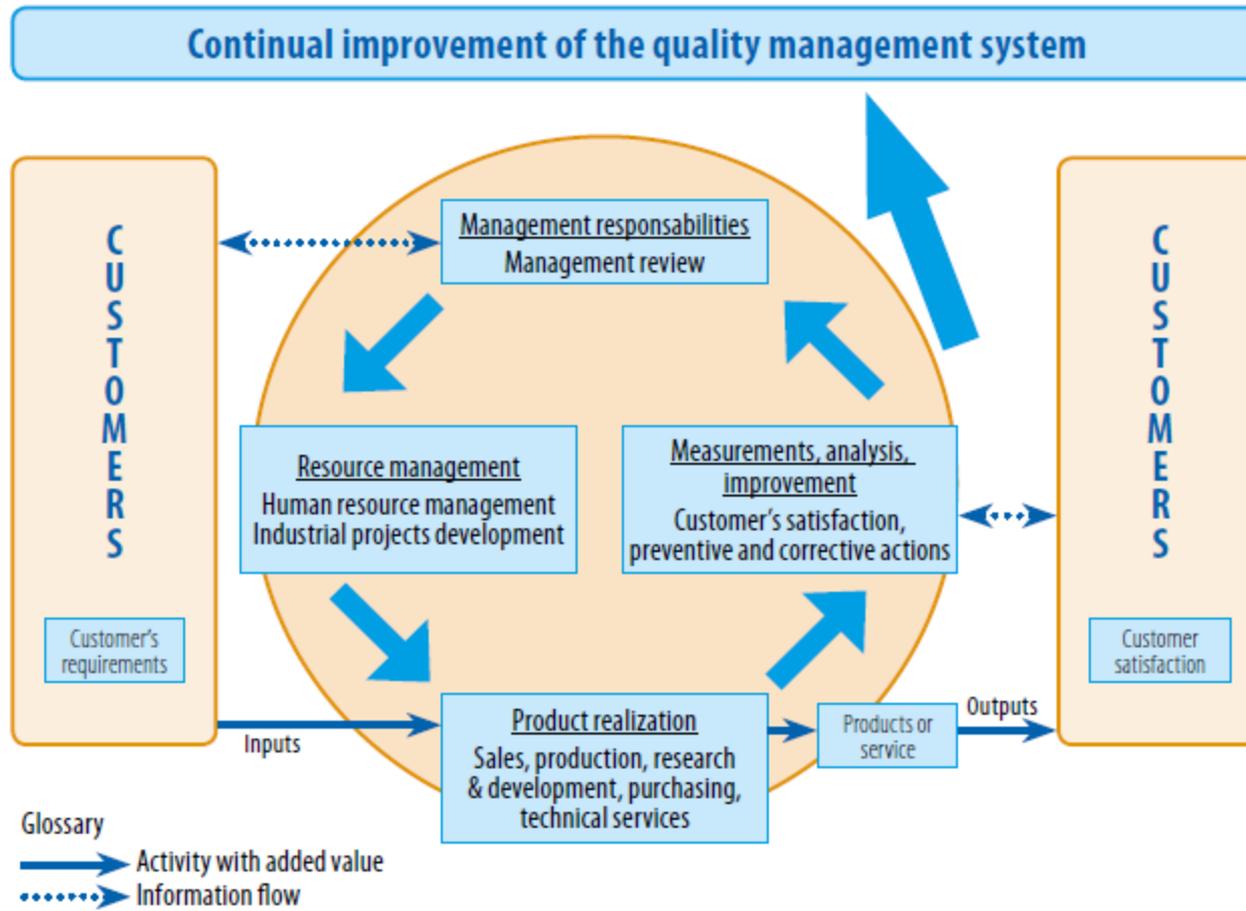
Mapei's value chain (1)

- Mapei is the third largest Italian chemical group and is specialized in the construction sector.
- The company uses raw materials – mainly non-organic such as cements and sands – operates batch manufacturing processes and, as final products, delivers chemical specialities to the construction sector (such as mortars and adhesives), as well as consumer products (such as sealants and varnishes).
- Mapei operates through a diversified network of distribution channels including retailers of construction and building material products, contractors (typically for large-scale projects) and a variety of associated professionals (such as architects, quantity surveyors, structural engineering consultants, installers).
- Since 1994 Mapei has implemented and continually upgraded a quality management system in conformity with ISO 9001. Designed and operated to meet customer needs, the system has been integrated with other management systems (see next slide)

Mapei's value chain (2)



Mapei's value chain (3)



Key value drivers at Mapei

- Four key value drivers have been identified on the basis of information gathered through interviews and official company documents (quality manual and other):
 - Product innovation
 - Product quality and reliability
 - Customer service
 - Health, safety and environmental protection

Attitude of Mapei towards standards

- The company rigorously applies existing standards relevant to its products (mainly EN and ISO standards) in the framework of its core business processes and functions, particularly in relation to quality control and compliance
- Mapei also participates actively in the development of standards within UNI's (the Italian standards development organization) national mirror committees, and often represents Italy in CEN and ISO technical bodies (covering the field of adhesives for ceramic tiles)

Preliminary analysis of the standards impact

- Four Mapei business functions have been identified as primary standards users and selected for the assessment:
 - **Technical assistance**
 - **Sales department**
 - **Research and development**
 - **Quality assurance, in particular production and logistics**

Scope of the assessment

- Focus is on the analysis on Mapei's adhesives for ceramic floor and wall tiles business generating 40% of sales (remaining 60% comes from eight other product lines)
- Another focus are Volatile Organic Compounds (VOCs). VOCs are emitted as gases from certain solids or liquids and include a variety of chemicals that may have short- and long-term adverse health effects
- The impact of Mapei's integrated management system could not be restricted to the adhesives business alone and estimates have been calculated for the whole company

Scope of the assessment

- The analysis of the impact of standards focuses on the product line «Cementitious adhesives* (type C adhesives) for ceramic tile» which is Mapei's primary offer
- Mapei offers two classes of type C adhesives: C2 is an improved product compared to C1. The assessment looks at the sales of both classes as well as the financial impact of the transition from C1 to C2 adhesives.

* According to ISO 13007 (or EN 12004), adhesives are classified as cementitious, dispersion and reaction resin adhesives. Cementitious adhesives, designated as «type C», are a mixture of hydraulic binding agents, aggregates, and organic additives for example, latex polymers, moisture retention additives, etc.

Technical assistance (Milan headquarters)

- The main activities of the Technical assistance department are:
 - Preparation and handling of documentation for the technical product
 - Customer assistance in the choice and use of a product suitable for intended use
 - Organization of courses for final users, mainly installers and designers
 - Complaints handling in accordance with ISO 10002
- According to departmental managers, the main benefit resulting from the use of standards is their contribution to bringing clarity on the level of performance of the various types of products available on the market
- Another significant benefit is the simplification of the procedures for certifying conformity in different countries

Sales

- The activity of this department is focused on product sales, performed primarily through the company's worldwide network of retailers. Major construction projects represent 20% of total sales (of which half are ceramic tile adhesives)
- The department collaborates with the technical assistance department in preparing specifications and discussing sales details and with the R&D function in analyzing the market situation
- The main benefits resulting from the use of standards outlined by the departmental managers are the same as those for the technical assistance department although the impact perceived by sales is lower
- The quality management system plays an important role in improving customer relationship tasks and in managing complaints

Research and development (into ceramic tiles, cementitious adhesives and other underlayer products) - 1

- The R&D department is responsible to the Mapei Group for
 - the development of new products and improvement of existing products
 - the definition of product specifications and testing
 - the definition of raw material requirements and their approval
 - the development of formulas used in production
- The laboratory has introduced an important programme to determine the release of VOCs from products and allow preliminary conformance to standards

Research and development (into ceramic tiles, cementitious adhesives and other underlayer products) - 2

- Some specific advantages from standards have been identified in relation to:
 - clarity in the dialogue with suppliers and reduction of transaction costs in the selection and testing of raw materials during the start-up of new manufacturing plants
 - enabling greater reliance on laboratory testing, reducing the need for field trials and support to more efficient product scale-up in the development of new products

Quality assurance

- Integration of several management systems into a single corporate model and its certification is an important element of Mapei's business strategy.
- This approach, through harmonization of activities and corporate procedures has significantly contributed to the internationalization of the company and its ability to target and serve new markets efficiently and effectively
- The integrated management system has allowed Mapei to rationalize and replicate its business development model in different countries

Impact of standards on the company EBIT

- The assessment covers a 10-year period (2001-2011) and bears in mind two factors
 - the increase in profitability through a change in the sales of products
 - the contribution of standards to the transition from a lower range product to an improved product range
- Facilitated by product standards and the European CE marking practice, sales of class C2 products have grown ~50% over C1 adhesives in 2002 to nearly 80% in 2011.
- Comparing total sales of Mapei's adhesives with those of ceramic tiles (owing to the logical link between the two), shows an annual average differential equal to 5.72% for the 10 year period analyzed
- Based on interviews and taking a median value between figures provided by the departments concerned , it is estimated that technical product standards and CE marking are responsible for ~35% of this result

Conclusion 1: Impact of product standards (ceramic tile adhesives)

- It is estimated that over the last 10 years, standards have contributed to an annual growth equal to **2.002% of total adhesive sales or EUR 240 000**. The average EBIT of the Mapei Group being nearly double that of Mapei Italy, the total contribution of standards to the Group would be in the region of EUR 480 000 per year
- During the 10 year period, Mapei's turnover increased from EUR 272 million in 2002 to EUR 510 million in 2011. Financial statements for the years 2007-2010 indicate an average annual contribution of standards to the company EBIT of 9.3%.
- Projecting the 9.3% data across the 10 year period and, considering that in the first 5 years the company achieved higher income, the **average annual contribution of standards to the company EBIT is estimated at 10%**

Conclusion 2: Impact of standards on the company EBIT owing to an integrated management system

- Mapei's management sees a correlation between global growth of its industrial plants based on a certified quality management system and the rapid sales growth achieved
- The Compound Annual Growth Rate (CAGR) of Mapei Group sales in the period 2002-2011 was 11% with an average annual turnover of ~EUR 130 million.
- The most conservative valuation indicates an annual contribution of management system standards at **~20% or EUR 26 million per year**
- According to consolidated balance statements, the average EBIT of the Mapei Group for the period 2007-2010 was equal to **6.3% of total consolidated group turnover.**

Conclusion 2: Impact of standards on the company EBIT owing to an integrated management system

- Applying the conservative figure 6.3% to the whole decade, it is estimated that management system standards have contributed directly to the EBIT of the Mapei Group at a rate of EUR 1 638 000 per year

Operational indicators	EBIT impact (EUR)
Impact of the transition to a new generation of products of higher quality (a transition partly driven by standards)	480 000
Contribution of Mapei's integrated management system to its international expansion	1 638 000
Total impact	2 118 000
Impact as a % of Mapei Group EBIT (2010)	2.9 %
Impact as a % of Mapei Group consolidated sales (2010)	0.14 %

Some additional qualitative considerations (1)

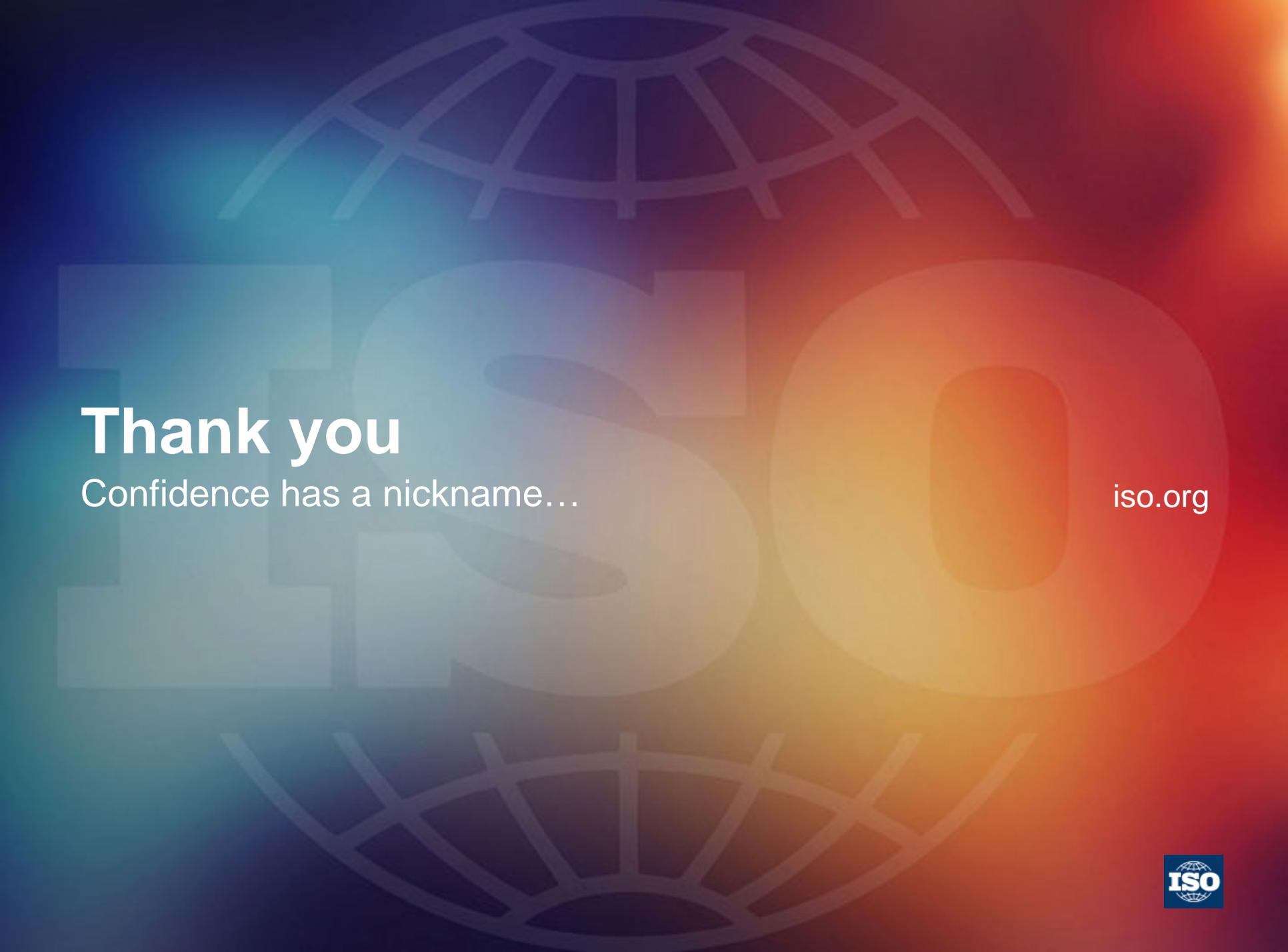
- According to Mapei, participation in the development of standards has three key advantages:
 - Possibility to influence the content of standards in a direction coherent with the knowledge and good practices applied by the company
 - Opportunity to acquire better knowledge of the needs, behaviour and strategies of producers active in markets
 - Immediate access to new test methods during the steps in the standards development process, thus reducing technological development cycles and time-to-market
- Qualitative advantages for the business functions assessed are indicated earlier in the study as it has not been possible to provide quantitative data but there are some advantages in areas that are not part of the assessment such as: (next slide)

Some additional qualitative considerations (2)

- Logistics:
 - the application of management systems has supported the rationalization of processes having a direct influence on customer satisfaction and loyalty. For example, the implementation of environmental management systems has helped to promote use of rail transport which has reduced the loss of aluminous cement due to ruptured bags in transit
 - consistent application of continual improvement practices has helped to better control the loading and circulation of trucks and reduce the time taken
 - improvements in scheduling have led to effective management of lower volume shipments, helping dealers to reduce stocks without affecting delivery times

Some additional qualitative considerations (3)

- Production:
 - optimization of processes and environmental management has led to a significant improvement in waste management at the company's most important manufacturing plant
 - adaptation of the process to favour maximum recovery of powder products, has reduced the amounts for disposal, leading to economic benefits and increased environmental respect



Thank you

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