

Innovation Management Capacity Assessment Report

07 / 2021

INTRAC

Innovation, Networking, Technology, Research
and Application Center

Innovation Management Capacity Assessment Report

1.0.	Executive Summary	3
1.1.	Work Method	6
2.0.	General Assessment of the Company's Innovation Management Capacity	9
2.1.	Characteristics of the Company and Basic R&D and Innovation Performance	9
2.2.	Company's Overall Innovation Management Performance	13
2.3.	Innovation Management Performance of the Company on the Basis of Sub-Axes	15
3.0.	Assessment of the Company's Innovation Management Capacity on the Basis of Sub-Dimensions	16
3.1.	Leadership and Intent	16
3.1.1.	Individual Roles	18
3.1.2.	Goals	19
3.1.3.	Context	19
3.2.	Organization	21
3.2.1.	Climate and Culture	22
3.2.2.	Structure	22
3.2.3.	Teams	24
3.2.4.	Collaboration	24
3.3.	Planning and Support	26
3.3.1.	Strategy	27

3.3.2.	Resource-Based Approach	28
3.3.3.	Main Capacities	30
3.4.	Process	31
3.4.1.	Identifying Opportunities	32
3.4.2.	Conceptual Creation	34
3.4.3.	Conceptual Validation	35
3.4.4.	Solution Development	36
3.4.5.	Putting Solutions into Practice	36
3.5.	Performance Assessment	37
3.5.1.	Innovation Metrics	38
3.5.2.	Success Factors	38
3.6.	Improvement	39
3.6.1.	Learning	40
3.6.2.	Dynamic Capacities	41
4.0.	Bottlenecks and Recommendations	42
4.1.	Internal Factors Barring Innovation	43
4.2.	External Factors Barring Innovation	45
4.3.	Recommendations	48

Executive Summary

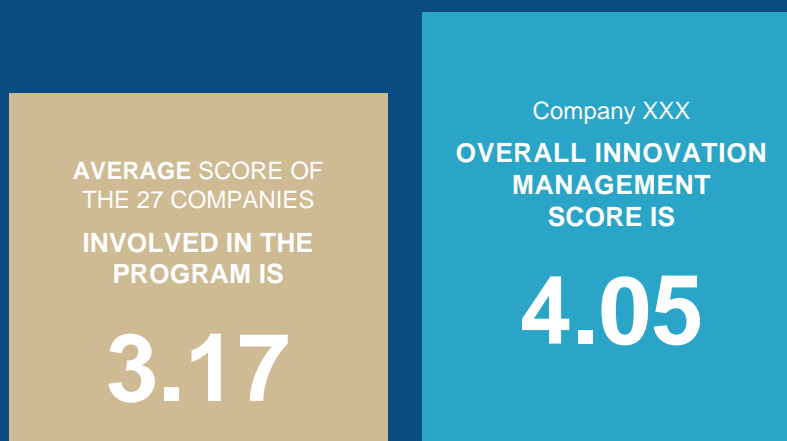
1.0.

The Innovation Program was designed by the Manisa Organized Industrial Zone (MOIZ) Innovation Center with the aim of measuring, analyzing and developing the innovation management capacities of companies. Within the scope of the program, a unique innovation management capacity assessment tool called iMAGE (Innovation Management Assessment Gadget for Enterprises) was developed. The aim of the program is to provide mentoring, consultancy and training support for projects prepared in light of the measurements and analyses to increase the innovation capacity of companies.

Accordingly, as part of the Innovation Program, the maturity level of your company in the field of "Innovation Management" has been comprehensively analyzed and evaluated within the framework of six main axes and 19 sub-axes, and a report has been drafted. Following these measurements and analyses concerning innovation management, the aspects of your company that need improvement, as well as its strengths were identified and presented to you, including suggested courses of action.

The Overall Innovation Management summary scores according to the measurements and assessments within the scope of the Innovation Program are given below:

The Overall Innovation Management score average of the 27 companies participating in the program is **3.17**. Your company's Overall Innovation Management score was **4.05**.



Following the analyses on the basis of all axes used by the iMAGE Innovation Management Capacity Assessment Tool, your company attained the following scores:



▶ Your company's innovation management capacity is fairly evenly distributed across six main axes.

▶ Your company received a **full score of 5** out of 5 in the "Goals" dimension under the "Leadership and Intent" axis, and in the "Solution Development" dimension under the "Process" axis.

▶ Again under the "Process" axis, your company **scored 4.5** in the "Conceptual Creation", "Conceptual Validation" and "Putting Solutions into Practice" dimensions, performing above average.

▶ However, your company performed below its average in the "Strategy", "Organizational Structure" and "Collaboration" sub-dimensions.

As a result of the assessment made on the basis of each dimension, the following areas were determined to be open to development, in order to increase the innovation management capacity of the company:



Leadership and Intent

- Equipping top management with methodological tools on innovation management.
- Making it a number one priority to participate in international R&D and innovation support programs.
- Implementation of joint R&D and innovation activities by increasing interaction with innovative companies on a national and international scale.
- Freeing up time for innovative work by reducing the workload of R&D employees.



Organization

- Developing a human resources system that supports the creativity of all employees in line with the company's goals.
- Establishing a more effective reward-incentive system for employees in order to develop innovation capacity.
- Giving importance to cooperation with technology companies and entrepreneurs (start-ups), especially in terms of tapping into new markets.



Planning and Support

- Establishing an innovation strategy and mapping out an innovation road map with internal and external stakeholders.
- The company's positioning itself as a learning organization.
- The company's focusing on value creation processes by analyzing the data collected using analytical methods.



Process

- The use of efficient innovation models such as open innovation in identifying opportunities in this field, creating and developing ideas.



Performance Assessment and Improvement

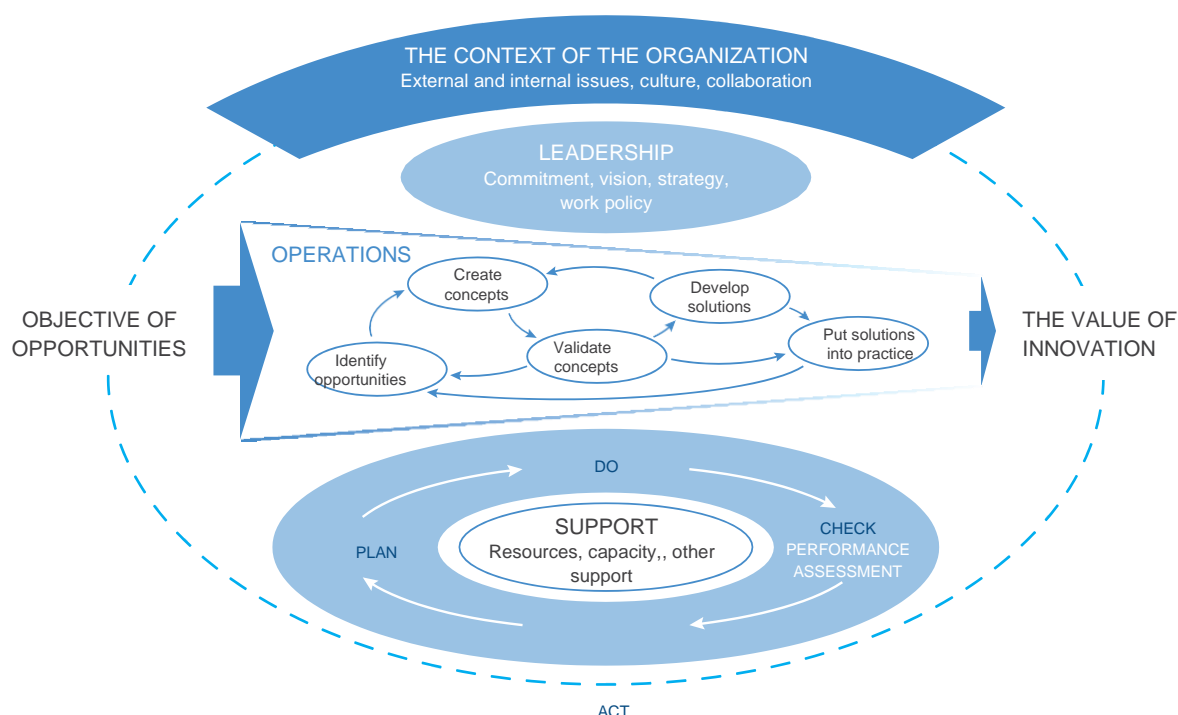
- The company's implementation of various analyses and performance assessment methods to evaluate the effects of any newly introduced innovation on production and organization.

Work Method

- 1.1. Developed jointly by the MOIZ Innovation Center and the United Nations Development Programme (UNDP), the "iIMAGE Innovation Management Capacity Assessment Tool" was created according to the system cycle of the ISO 56002:2019 Innovation Management System shown in **Figure 1**.

As can be seen in Figure 1, it should be emphasized that while the survey was designed according to the Plan-Do-Check-Act (PDCA) cycle, it also takes into account the ISO/TR 56004 Innovation Management Assessment: Guidance standard.

Figure 1 | ISO 56002 Standard Innovation Management System Approach



Source: ISO 56002:2019 Standard

The "iIMAGE Innovation Management Capacity Assessment Tool" question set consists of two parts:

The first part consists of questions to evaluate the data and performance of the company on innovation management, to help overcome issues with assessment. In this context, the iIMAGE Innovation Management Capacity Assessment Tool offers a relatively mixed and quite comprehensive approach that aims not only to measure the innovation capacity and capacities of companies, but also to set forth their innovation activities and performance.



The second part consists of six main sections and 19 subsections on innovation management capabilities of companies. The said sections and related sub-headings are presented in **Table 1**.

Table 1 | Main and Sub-Dimensions of the iMAGE Innovation Management Capacity Assessment Tool

1 Leadership and Intent Individual Roles Goals Context	2 Organization Climate and Culture Structure Teams Collaboration	3 Planning and Support Strategy Resource-Based Approach Main Capacities
4 Process Identifying Opportunities Conceptual Creation Conceptual Validation Solution Development Putting Solutions into Practice	5 Performance Assessment Innovation Metrics Success Factors	6 Improvement Learning Dynamic Capacities

First of all, the "iMAGE Innovation Management Capacity Assessment Tool" question set was sent online to the 27 companies selected from among companies which responded to the call for applications to the Innovation Program. The first part of the survey has 36 preliminary questions about companies' innovation activities and performance, while the second part consisting of 41 questions about "Innovation Management Capacity" to measure companies' innovation capacities and capabilities. These questions were evaluated on a 5-point Likert scale. The online survey gave the companies the opportunity to make their own self-assessments, and once they were past this stage, a pre-planned field study was conducted with the companies as part of the interview process.

Thus, insights from the self-assessment were discussed intensively with the company managers and, to a certain extent, a calibration was carried out and the findings were evaluated by experts in order to better understand the company's innovation capacity.



During the interviews, which lasted approximately two hours, the experts from the MOIZ Innovation Center and the UNDP senior advisor examined each dimension and all the answers to the survey questions in detail and completed the scoring by re-evaluating the answers. The report also contains references to the remarks made by the company representatives during the company interviews.

The innovation capacity of the companies was graded on the basis of the final scores obtained as a result of the assessment, according to levels corresponding to the following score ranges:

Table 2 | Innovation Management Capacity Placement Table

INNOVATION MANAGEMENT CAPACITY			
SCORE	LABEL	LEVEL	REMARKS
4 - 5	Platinum	Expert	The company has a highly efficient innovation management performance. The company has the potential to "radically innovate" to move towards areas with higher added value.
3 - 4	Gold	Advanced	Although the company has started to apply innovation management to so many aspects of its operations, a more comprehensive improvement is needed for innovation to become a company culture.
2 - 3	Silver	Medium	Although the company made some efforts towards innovation management, it faces challenges in systematically implementing the innovation approach.
0 - 2	Bronze	Entry-level	The company has started to develop some awareness about innovation management capacity. Innovation processes are limited to finding instant solutions to problems encountered in production processes rather than being systematic.

2.0.

General Assessment of the Company's Innovation Management Capacity

2.1.

Characteristics of the Company and Basic R&D and Innovation Performance

According to the analysis results of the data collected, the company XXX, a large-scale, medium-high technology company with foreign partners operating in the automotive supply industry sector, has been producing various parts and components for motor land vehicles for many years.

It is noteworthy that the company, which obtains 50% of its turnover from exports, is a pioneer and market leader in its sector both in Turkey and in Europe. Having one of the first R&D centers in Turkey, approximately 1/4 of its employees are university graduates, 11% are engineers and 13% are white-collar workers. However, despite this great human resource potential, the company's R&D and innovation outputs are relatively modest. Although the company has made various product, process and business model innovations over the past five years and successively increased the revenue share of products and services developed from innovation projects, the innovation performance remains limited in the area of intellectual and industrial property rights (IIPR).

In the last five years, the company has filed 25 national patents and eight trademarks, and carried out five projects at a national level. Despite this considerable achievement, it is apparent that the company does not want to obtain a patent without commercialization, so achievement in the field of IIPR remains relatively limited.

The company's performance in the field of IIPR reflects the generally recognized fact that the Turkish industry has yet to develop a tendency towards R&D.

The medium- and long-term nature of R&D investments, the existence of contingency risks, and the risk of returns in addition to financial expenses, among others, lead the company XXX to take shorter-term approaches like other companies.

Table 3 | Company's Key Characteristics and Core R&D and Innovation Indicators (1/2)

Company XXX	
Date of Incorporation	1945
Region and Location	Manisa OIZ
Scale	Large-Scale Company
Ownership Structure	Domestic - Foreign
Sector in which it operates	Automotive Supply Industry
NACE Code Field of Activity	29.32.20
Technology Level	Medium-High Technology
Number of Employees (Total)	634
White-Collar	94
Blue-Collar	540
Engineers	76
Employees that are Higher Education Graduates (%)	26.03
Number of International Management Systems	5
Share of Exports in Total Turnover (%)	50
Kilogram Value of Exports	€ 2.2

Table 3 | Company's Key Characteristics and Core R&D and Innovation Indicators (2/2)

Company XXX	
R&D Center	Yes
R&D Unit	Yes
Number of R&D Personnel	32
Written R&D/Innovation Strategy	Yes
Number of Patent Applications (Total)	25
National	25
International	2
Number of Utility Model Applications (Total)	-
National	-
International	-
Number of Industrial Design Applications (Total)	-
National	-
International	-
Number of Trademark Applications (Total)	8
National	8
International	-
Product and/or Service Innovation	Yes
Process Innovation	Yes
Business Model Innovation	Yes
Number of Incentivized Projects	5

The comparison of XXX's R&D and innovation indicators against the average values of other companies participating in the Innovation Program is shown in **Table 4**.

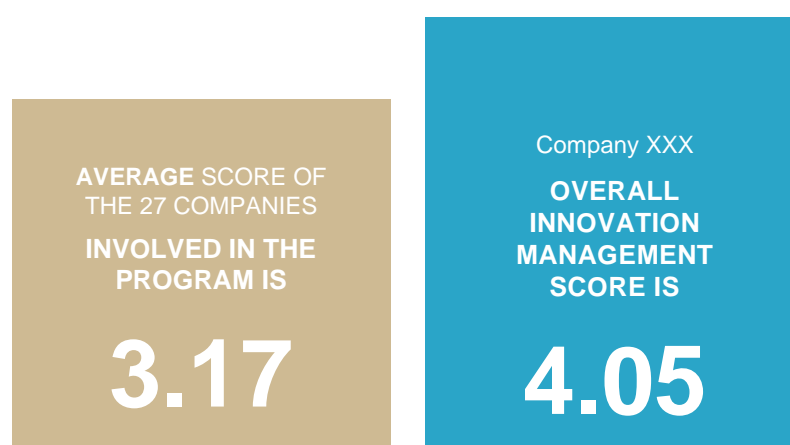
Table 4 | Basic R&D and Innovation Indicators

	PARTICIPATING COMPANY AVERAGE	XXX
Proportion of Engineer Employees (%)	7.78	11.99
Proportion of R&D Personnel (%)	3.65	5.05
Number of International Patents	1.56	2
Number of National Patents	3.96	25
Proportion of Companies with R&D/Design Centers	0.37	✓
Proportion of Companies with R&D Units	0.74	✓
Proportion of Companies with a Written Innovation Strategy	0.59	✓
Proportion of Companies with a Team that Carries Out Innovative Processes Systematically	0.78	✓
Proportion of Companies Innovating Products	0.93	✓
Proportion of Companies Innovating Processes	0.81	✓

2.2. The Company's Overall Innovation Management Performance

According to the results of the analysis of the data collected from the company, the company received **an average score of 4.05 out of 5** in innovation management. With this score, the company was awarded the **"iIMAGE Platinum"** label in terms of its innovation management capacity.

The **average value** of the 27 companies in the iIMAGE pool for innovation management capacity, at the time of the said assessment, was **3.17**.

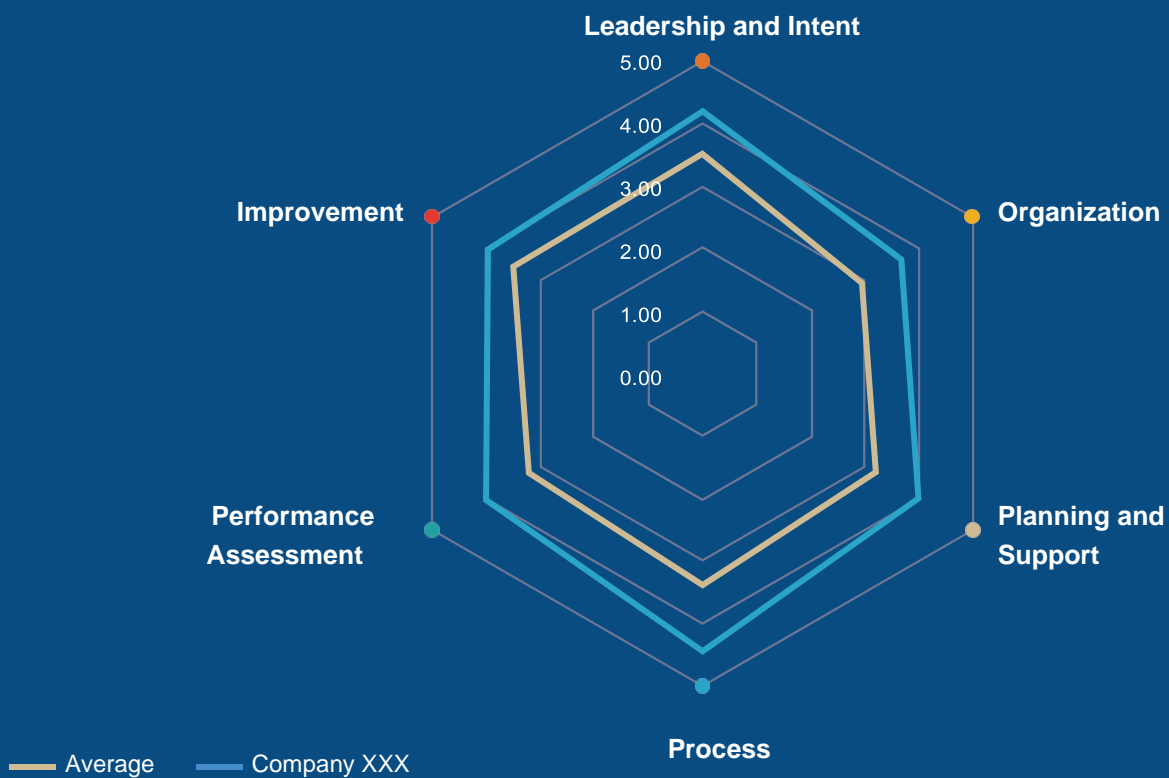


This score was determined as a result of summing the scores from items in each of the six main sections and 19 sub-dimensions in the iIMAGE Innovation Management Capacity Determination Survey, and calculating their averages. Accordingly, the company has an above the average maturity level in all of the six main axes of Innovation Management Capacity, namely "leadership and intent", "organization", "planning and support", "process", "performance assessment" and "improvement". **The company has a fairly balanced distribution on innovation axes.**

Figure 2 | Innovation Performance of the Company on the Basis of Main Axes



Figure 3 | The Company's Overall Innovation Management Performance



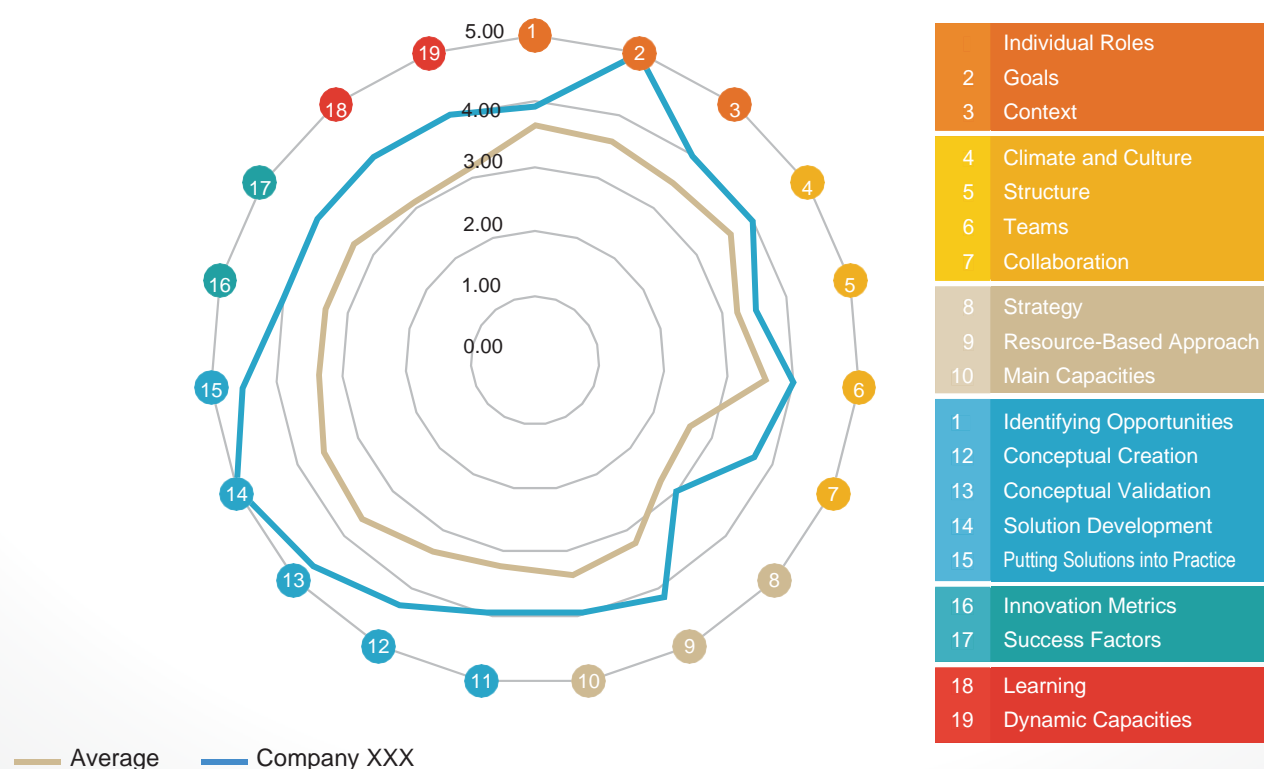
2.3.

Innovation Management Performance of the Company on the Basis of Sub-Axes

There are 19 sub-dimensions for the analysis of innovation management in the iMAGE Innovation Management Capacity Determination Survey. According to the results of the analysis, the company **performed better** in all sub-dimensions of innovation management **compared to the average of the 27 companies** participating in the project. Accordingly, the company **scored 5 out of 5** in the "goals" and "solution development" dimensions, while it scored 4.5 points in the "conceptual creation", "conceptual validation", and "putting solutions into practice" dimensions under innovation processes and 4.2 points, above its own average (4.05), in the "resource-based approach" section. On the other hand, its innovation capacity in the "strategy", "organizational structure", and "collaboration" sections corresponded to the lowest score below its own average.

It has a maturity level near its own average in the remaining dimensions, such as the "individual roles" and "context" dimensions related to leadership, the "climate and culture" and "teams" dimensions that make up organizational structure, the Main Capacities section that represents planning, the "identifying opportunities" section under the innovation process, and the "performance assessment" (Innovation Metrics, Success Factors) and "improvement" (Learning and Dynamic Capacities) dimensions. **In general, the company has a fairly balanced distribution in all the sub-headings of innovation capacity.**

Figure 4 | Innovation Management Performance of the Company on the Basis of Sub-Axes



Assessment of the Company's Innovation Management Capacity on the Basis of Sub-Dimensions

3.0.

In this section, the 19 sub-dimensions in the iMAGE innovation management capacity assessment tool are presented as per the findings and assessments that emerged within the framework of the interviews conducted with the company.

The company's current situation with respect to each dimension, as well as its strengths and weaknesses, and its level of maturity under relevant dimension are detailed using the average values of the items/dimensions on a 5-point Likert scale and via comparison against the average scores of the 27 companies participating in the project.

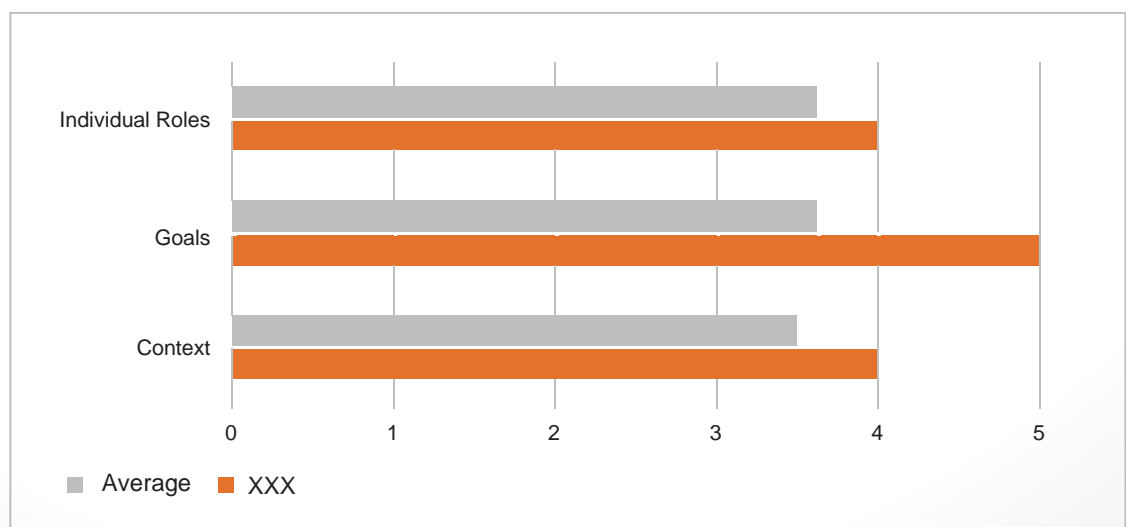
3.1.

Leadership and Intent



The Leadership and Intent section evaluates the roles that top management plays in innovation, the goals they set, and the alignment of those goals with the structure and functioning (Context) of the company. The company's maturity level with regard to the dimensions "individual roles", "goals", and "context" in the main section Leadership and Intent is shown in **Figure 5** in comparison with the average values of other companies.

Figure 5 | Leadership and Intent





Accordingly, the company has an above-average maturity level in all three dimensions of "leadership and intent". This shows that top management supports innovation in the company, has an innovative vision focused on value creation, and is determined to make the company a pioneer in its sector by defining global goals, while at the same time seeking to bring innovative approaches, techniques and processes to the company.

In fact, familiarity of the company's top management with R&D and innovation activities, and the presence of top executives experienced in handling matters of innovation play a major role in the vision set forth.

"Today's general managers or deputy general managers of industrial companies in Turkey have little R&D background. They usually come from finance, production or maintenance. All three of our deputy general managers have a background in R&D."

Of critical importance, therefore, is the awareness that the company can leverage its technological capabilities and opportunities not only in its own sector, but also in other sectors in the coming period.

"Although we are a company operating in the automotive supply industry sector, we want to use these technologies in the defense and aviation industries. For example, we want to be the supplier for composite heads used in armed UAVs and we want to provide such using materials recyclable from thermo-plastics."

3.1.1.

Individual Roles

Average Company

In terms of the individual roles dimension, the top management of an average company in the iMAGE innovation management pool has a business plan and strategy that supports innovation and innovation projects. In this context, top management uses the national value chain to promote innovation, attempts to keep the tabs on current technological developments using various methods and tools, but does not make enough use of appropriate channels to track developments at the global level. In an average company, top management provides a working climate conducive to innovation and opens up access to financial and human resources, albeit partial, for the management of innovation projects.

Company Assessment

The company's top management seems to have a clear vision to support innovation. In fact, the company tends to define itself as a technology-driven company that **"tries to steer it away from selling products towards selling services, selling value"**. The company clearly defines itself and its goals on a global scale. It also appears that the top management supports innovation activities, provides the necessary human and financial resources, albeit somewhat limited, and encourages the employees to pursue innovation. Indeed, the fact that the company is one of the first R&D centers in the automotive supply industry in the country proves this right.

The company management decently follows current technological developments and uses various instruments in this sense (membership in platforms, following/becoming a member of thematic non-governmental organizations, publications and institutions, etc.).

Although the company's top management has a business plan and strategy that supports innovation and innovative projects, this strategy is not open and accessible to everyone. The company provides funding for R&D and innovation projects as needed, however, the constant cycle of seeking incentives and grants for innovation projects due to the fluctuations in market conditions and limited financial resources causes delays and bottlenecks.

RECOMMENDATION

"It is recommended that the company develop new financial resources to ensure its global competitiveness for innovation and make its innovation strategy accessible to all employees and stakeholders. This situation can also be seen as a motivating factor for employees to take responsibility and grow an understanding of areas in which they should improve. Therefore, it can act as an important catalyst for developing the company's long-term innovation capacity. Testing the company's vision, briefly described as "trying to steer it away from selling products towards selling services, creating value", in a specific area, technology or product, can be a starting point."

3.1.2. Goals

Average Company

In terms of the goals dimension, an average company in the iMAGE innovation management pool has defined innovation goals, but struggles to effectively implement the action plans associated with those goals. Although these companies have from time to time developed national and regional collaborations and joint projects, the relationships they have developed, especially with global companies, have not yet come to fruition.

Company Assessment

As part of its vision, mission and strategy, the company strives to become a **"global technology company of choice in suspension and light product solutions"**. Indeed, the fact that the company is not satisfied with the marketing of traditional range of products in its sector, constantly trying new strands of innovations and taking the global stage as its benchmark, shows that the company is a leading innovator in its sector.

RECOMMENDATION

"The company's involvement in international networks and the development of joint projects in cooperation with foreign companies and institutions on products/services with potential to generate radical innovations to become more visible in its sector, including publications and patents, is an area that is open to improvement. In this context, improving the social capital of the company and its employees was also identified as one of the factors that would augment the company's innovation management capacity."

3.1.3. Context

Average Company

In terms of the context dimension, an average company in the iMAGE innovation management pool has a high awareness of the need to embrace innovation, pursues innovative approaches, and mostly tries to implement innovative approaches inside the company, and attempts to implement, by trial and error, short-term innovative approaches, especially in certain technology fields, sub-units, or sub-units of the organizational structure.

Company Assessment

The company's top management constantly monitors innovative activities, processes and practices and seeks to bring the newest innovative trends to the company. In this context, the company is making various attempts to adapt innovative approaches to the organization, training its employees and trying to create a new work culture.

Indeed, it is worth noting that the company has received training on design development processes from Fraunhofer, for example, and has also opted for some organizational innovations to leverage from remote working scheme more actively at the engineering level.

"The training we got from Fraunhofer was focused on, 'What should be our perspective on processes and materials, how does the design process take place?'. Meanwhile, the human resources culture transferred into the company, including myself, built on that. That is to say, the 'How do things get designed, what is the right perspective, what is needed' process is actually a process carried out on our part somewhat through injection."

In other words, it is an important step for the company to try to restructure its organization by taking some sort of risk, to support and redesign its innovation processes, but these have not yet been incorporated fully into its business processes. In fact, not being able to put in the time and effort for innovation processes is a consequence of this situation.

"If you want to do something innovative, you really need time. We cannot really step up such efforts perhaps due to the fact that Turkish companies or the mindset of the country are used to working with such limited resources by nature, or maybe because of a lack of motivation."

RECOMMENDATION

"It is recommended that the company take more concrete and bold steps in this context. For example, the company can at least slightly reduce the weekly workload of its R&D employees and create certain timeslots and settings for them to increase their creativity, research and test innovations they're curious about, and even carry out in-house entrepreneurial efforts, which can help with employee motivation and willingness to innovate."

3.2. Organization

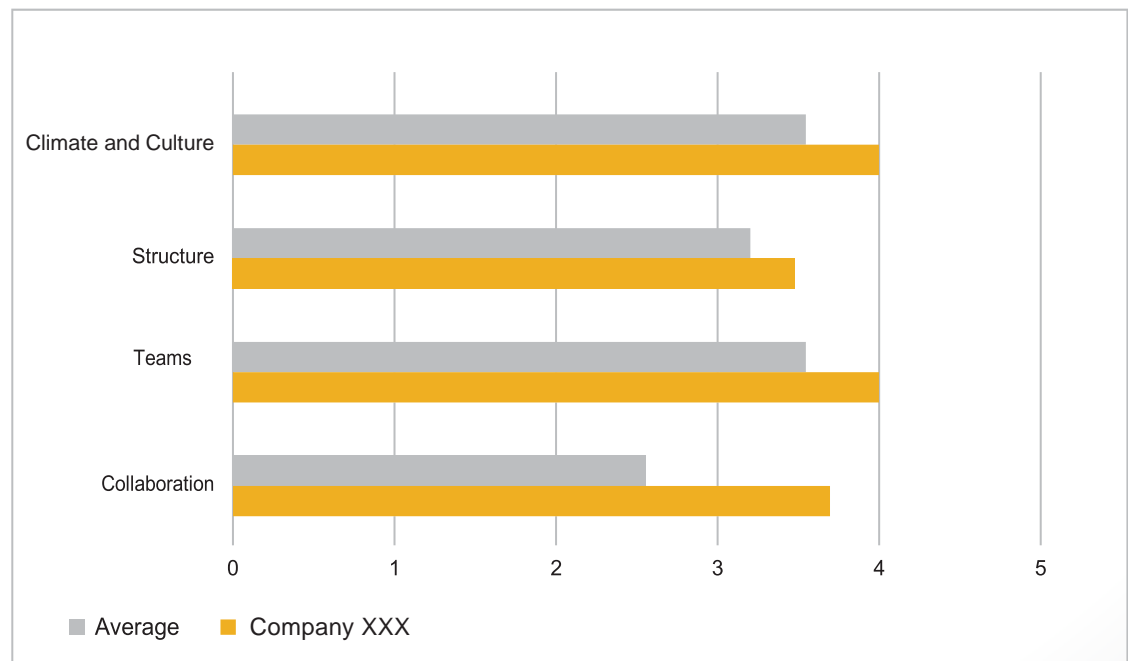


The organization section is where the innovation climate, culture and structure of the company are assessed. The company's maturity level with regard to the dimensions "climate and culture", "structure", "teams", and "collaboration" in the main section Organization is shown in **Figure 6** in comparison with the average values of other companies.

Accordingly, the company has an above-average maturity level in all four dimensions of "organization". Looking at Figure 6, it is clear that the company has a climate and culture that supports innovation. In fact, it is evident that behaviors and norms for promoting innovation are internalized and used to solve problems in the company.

It is noteworthy that the organizational structure of the company is set accordingly and employees are involved in innovation processes with an interactive system established between the teams, although not perfectly. Collaboration with various actors in the innovation process seems to work quite well, apart from competitors and start-ups.

Figure 6 | Organization



3.2.1. Climate and Culture

Average Company

In terms of the climate and culture dimension, an average company in the iMAGE innovation management pool has a vague atmosphere regarding innovation where employees started to get involved in the innovation process, innovative behaviors and norms are encouraged, but a systematic, organization-wide learning process of innovation has yet to matured really.

Company Assessment

It is clear that company atmosphere supports innovation. In fact, it is evident that values, behaviors and norms for promoting innovation are internalized, encouraged, and used to solve problems in the company. In general, although not written, the company obviously has innovative actions and routines, and both its organizational system and its incentive-reward system create a good innovation climate and culture.

RECOMMENDATION

"One sees that organization-wide learning process of innovation is limited in the company, and at the same time, a more effective reward-incentive system should be established to encourage the formation of new values and norms. Furthermore, it is recommended that employees be given more time for innovative work away from routine tasks."

3.2.2. Structure

Average Company

In terms of the organizational structure dimension, an average company in the iMAGE innovation management pool has a support system that encourages its employees to innovate, but does not provide employees with sufficient time, incentives, salaries, and rewards for their innovative activities. There is a career planning and promotion system set in stone for employees, but the system does not work fully. Although employee roles, tasks, and units are well-defined, job and process descriptions related to innovation activities are not fully linked. Despite a systematic information/document system, not all employees (production, sales, management) have fully embraced the information/document management system yet. In short, no full-fledged innovation mechanism reigns in an average company.

Company Assessment

There is a career planning and promotion system set in stone for employees, but the system does not work fully. Although employee roles, tasks, and units are well-defined, job and process descriptions related to innovation activities are not fully linked.

Despite an information/document systematics, not all employees (production, sales, management) have fully embraced the information/document management system yet. In short, no full-fledged innovation mechanism reigns in an average company.

The company has an organizational structure that supports innovation. It appears that the roles and tasks of employees are well-defined due to the existence of an R&D center within the company, but due to the uncertain nature of R&D, which is open to interaction and rapid change, it is also noteworthy that there are at times uncertainties with the job descriptions of employees.

The company has a clearly defined career plan and development system for its employees. The respective system is a merit based system, and employee performance is measured using the Balanced Scorecard and OKR (Objectives and Key Results) systems, which are regularly reviewed by management for specific targets and deadlines.

RECOMMENDATION

"To make the system more effective, it is recommended to create a digital platform where everyone strives for common goals."

The company has a well-defined and well-known incentive and reward system that encourages employees to innovate. In this context, the innovation performance of employees is evaluated and rewarded. In addition, it was emphasized that employees involved in projects, making new publications, filing for a patent or making a new invention were rewarded at certain rates, but that this system neither works effectively nor provides motivation, considering the capacity of the organization.

Also, it is evident that all documents, information, and administrative/workflow-related processes within the company are collected, stored, integrated with each other in a single system with SAP, an enterprise resource planning (ERP) system, and that a system is in place whereby all departments within the company can easily access the said management system.

3.2.3. Teams

Average Company

In terms of this dimension, an average company in the iMAGE innovation management pool has no adequate interactions between departments, nor a spirit of teamwork. The systems, techniques, and resources that facilitate collaboration and co-creation cannot be managed to make teamwork more efficient.

Company Assessment

Cross-departmental teams put together for innovation worked on innovation projects in collaboration with each other. For internal company projects, teams from different units work together. Systems, techniques and resources are available to facilitate team collaboration. In particular, the multidisciplinary structure of the R&D center and the level of interaction it allows facilitate this process.

RECOMMENDATION

"There is still a vagueness around the issue of cross-departmental teams developing and implementing ideas in a more systematic and clear-cut way. In this context, it can be beneficial for teams also to take an active role and even compete with each other in the process of idea development. Also, in-house entrepreneurial efforts can be encouraged and different business models can be tested on specific products and technologies with their benefits assessed."

3.2.3. Collaboration

Average Company

Collaboration with customers is more systematic and various techniques and methods are used to manage the collaboration process. Collaborations with suppliers, universities, NGOs and intermediary institutions are not as systematic as stated above. In the average company, collaborations with competitors, other companies, and start-ups are largely based on random exchange of ideas and opinions.

Company Assessment

The company carries out innovation activities and collaborations with many external stakeholders such as customers, suppliers, universities, other companies and supporting organizations, engages in joint projects and develops new products, business models and processes to innovate and develop new technologies. It uses various techniques and methods to strike up new ties of cooperation and manage the cooperation process.

The company pursues collaborations based on concrete projects and strong outputs that directly contribute to the innovation process, especially with customers and universities. Considering how difficult and rare cooperation between universities and companies is in Turkey, the company still operates a serious policy on that account (4 SANTEZ projects, high number of graduate and doctorate students among its employees).

The company has problems with developing collaborations with competitors and start-ups, considering the difficulty of cooperation with competitors, and the fact that it may not be suitable for every sector; cooperation with start-ups in particular stands out as a concrete improvement area for the company.

In general, collaboration with various external actors, except for competitors and start-ups, in the innovation process works well, but although the company works with external stakeholders to develop new and open technologies, there are weaknesses with collaboration with start-ups and operating an open innovation system.

RECOMMENDATION

"The company can be more active in developing collaboration with start-ups, it can use large company/start-up collaboration models (to help the start-up find funding by developing a joint project, to allow for the in-house development of a start-up idea while at the same time supporting the company with an open innovation model, to include entrepreneurs as employees in the company during the implementation stage of the start-up idea within the company, etc.). It can build relationships with start-ups complementary to in-house entrepreneurial activities or as a substitute for in-house entrepreneurial activities.

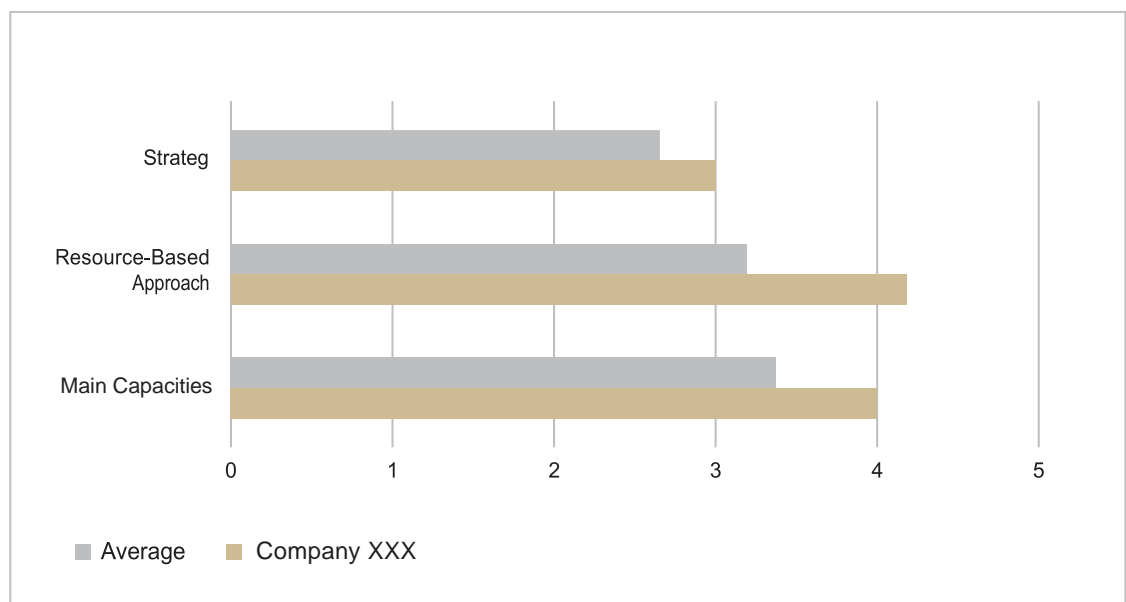
Above all, it can build a system that measures benefits and returns from collaboration, so that collaboration has a systematically monitored structure and its impact is measured within the company."



The company's maturity level with regard to the dimensions of "strategy", "resource-based approach", and "main capacities" in the main section Planning and Support is shown in **Figure 7** in comparison with the average values of other companies.

Analyzing this chart, all three planning-related dimensions of the company show a maturity level above the average of the 27 companies participating in the project. Although the company does not have a written innovation strategy for this main axis, its business strategy includes the projects and goals for R&D and innovation over the next five years. It appears that the distinctive resources of the company that make a difference and the basic capacities that transform these resources into output and value are important in planning innovation processes. In fact, the company has sufficient physical resources, human resources, social capital resources, financial resources and intellectual and industrial property resources to support the innovation process. It also appears that the company has the ability to acquire, adapt and develop technologies in addition to data collection and analysis that will create a competitive advantage over its peers.

Figure 7 | Planning and Support



3.3.1. Strategy

Average Company

Although an average company in the iMAGE innovation management pool has a written strategy, the innovation goals in this plan are not clearly defined. In the company, innovation activities and processes are tracked down in writing, but the planning and implementation processes for innovation activities are carried out hierarchically by the top management.

Company Assessment

The company aims to become a global technology company of choice as stated in its vision and mission, therefore it has an approach that focuses on innovation. Moreover, the company has a business plan and strategy that supports R&D and innovation. In general manner, this business strategy includes the projects and goals, as well as the technologies for R&D and innovation over the next five years, in addition to the human and financial resources to be made available to that end.

"We have a five-year strategy, but if you ask what kind of performance system we're running in terms of planning, organization and investment needs, there's not much there."

That being said, the strategy in question is not designed as a typical "mature innovation strategy set down in black and white" and is not open and accessible to everyone. It is an innovation strategy that includes rather industry- and company-specific macro trends and goals, but is not known to the employees, or tailored to the individual, or balanced (where goals are based on knowledge, skills, and capacities, and performance is measured), and no stakeholders are aware of it. On the other hand, while having a strategy is good, ownership of that strategy by the entire company is a very important asset.

RECOMMENDATION

The company should try to establish an innovation strategy and innovation road map to strengthen the company's global competitiveness. This innovation strategy should clearly define the roles of all employees and different business units in the innovation process and the relationships between teams, and set out how external stakeholders contribute to the innovation process and strategy development. One of the main goals of the innovation strategy should be a company-wide awareness that innovation is achieved through open, interactive and collaborative processes with the positioning of the company as a "learning organization".

3.3.2. Resource-Based Approach

Average Company

In terms of the resource-based approach dimension, an average company in the iMAGE innovation management pool has the distinctive physical, human, financial, social capital resources and Intellectual and Industrial Property Rights (IIPR) required for innovation, but it is not fully capable of using these resources effectively. Although the company has sufficient intellectual capital to apply for public support and incentives, it is unable to take sufficient advantage of these opportunities. In addition, not enough effort is made to increase the contribution of the educated workforce to the company via specialization in certain fields. An average company does not have qualified IIPR that will provide the company with a competitive advantage. Compared to other sources, the average company has more limited distinctiveness in terms of IIPR and better distinctiveness in terms of social capital resources. For example, the company can reach various markets, human and physical resources by using its social capital and network.

Company Assessment

It appears that the company has distinctive resources that make a difference in the planning of innovation processes. In fact, the company has sufficient physical resources, human resources, social capital resources, financial resources and intellectual and industrial property resources at a minimum level to support the innovation process.

For example, the company measures workforce performance and supports merit-based skill development, provides training, hires intellectually equipped individuals with high social capital, and develops appropriate work routines and behaviors. In this sense, it is seen that the distinguishing resource of the company on a global scale is its human resources and social capital relations.

However, it is hard to say that its some other resources are largely inimitable resources that ensure the company's global competitiveness. In particular, there are areas that need improvement in terms of physical and financial resources and access to financing, as well as intellectual and industrial property rights (IIPR), in the context of global distinctiveness.

First of all, it is necessary to develop the company's sources of access to financial resources and financing that provide global competitiveness for innovation. Given the fact that the company competes globally, the proportion of the budget allocated to R&D and innovation is relatively low compared to the world standards and it is important to increase this allocation to a level of 5% in order to maintain competitiveness. Similarly, leveraging international resources, especially EU project funds, for innovation can be another exit strategy.

On the other hand, it seems necessary for the company to make progress on IIPR in the medium and long term, if not in the short term, which will ensure global competitiveness. Although the company can produce more patents than its potential, it follows the path of keeping the innovation to itself as a trade secret until it is commercialized to prevent leaks and imitations.

"If we were to apply for a patent today, we would have a minimum of 5-6 products for which we can get a patent. But doing this before going down the path of launching a product on the market is not my preferred method at the moment really. When you look at it, there are problem-solving techniques to get a patent and figure out how to get around it. This is one of the reasons why I am a bit skittish when it comes to patents. I do not want the company to be so forthcoming with its new products."

However, this method has advantages as well as disadvantages. The know-how, employee experience and work routines that ensure the company's global competitiveness remain an embedded resource within the company.

RECOMMENDATION

"The Intellectual and Industrial Property Rights (IIPR) process is on its way to becoming a strategic asset and resource for companies, and therefore, in the medium and long term, the company's IIPR process should be improved with programs and projects rolled out to develop this resource."

3.3.3. Main Capacities

Average Company

In terms of the main capacities dimension, an average company in the iMAGE innovation management pool has capacities in data collection and analysis, technology acquisition, technology development, and technology adaptation, but struggles to use these capacities efficiently and competitively. It is committed to making newly developed or acquired technologies available company-wide, but has not yet been able to do so fully. Although there is systematic data collection and analysis in the technology acquisition, development, and adaptation stages, the company uses very complex methods and has difficulty transferring the information gained through data analysis to business processes.

Company Assessment

It appears that the company has the ability to acquire, adapt and develop technologies in addition to data collection and analysis that will create a competitive advantage over its peers. The company is on the lookout for new technologies and has the ability to acquire and process them quickly, adapt them to its own product and service processes and disseminate them. Likewise, it is evident that the company has the ability to develop technologies that can be used in the defense and aviation industries, producing composites and their related materials recyclable from thermo-plastics, apart from the automotive supply industry, which is its own sector.

In addition, the company has advanced skills in processing and analyzing the data collected from production process, R&D and innovation process. Data collection processes have been digitalized and some data can be analyzed automatically, enabling the company to leverage its own skills in transforming data into information and use it to interpret the data to improve routine business processes where appropriate.

RECOMMENDATION

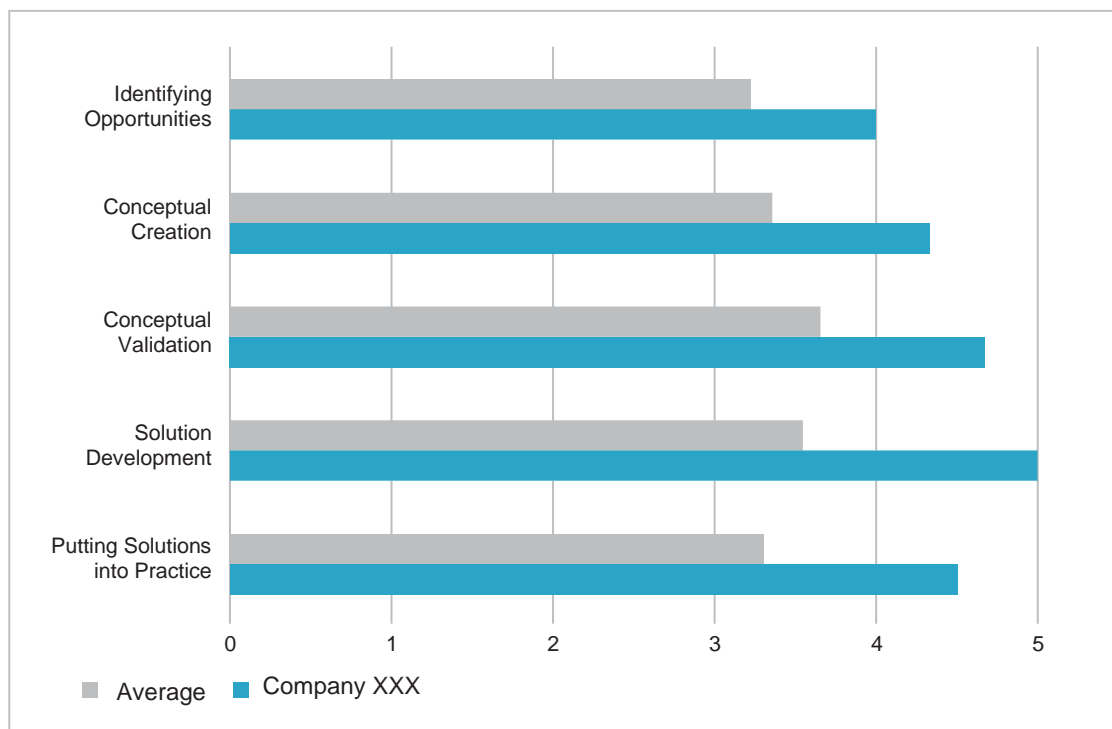
"In order for the company to adapt to changing conditions and maintain its competitive advantage, it should put into play structures that collect and analyze such data and provide feedback using more analytical methods."



The company's maturity level with regard to the dimensions "identifying opportunities", "conceptual creation", "conceptual validation", "solution development", and "putting solutions into practice" in the main section Process is shown in **Figure 8** in comparison with the average values of other companies.

Accordingly, Figure 8 shows that the company has a maturity level above the average of the 27 companies participating in the project in all dimensions of the innovation processes. Within the scope of this main axis, it can be seen that the company uses a wide range of channels to reach information in its innovation processes.

Figure 8 | Process



It is understood that the company has both the resources and the physical and cultural environment to promote creativity processes. Ideas collected and filtered through in the idea development process are systematically evaluated with some thrown out and some embraced for test projects, and ideas past the testing process are prototyped and utilized for trial production. In the process, the company moves towards the production of the new product and service, taking into account the feedback, expectations and needs of both front-line users and, in particular, customers. After this stage, the company deals with the commercialization of the newly developed products and processes, while on the other hand, it pursues the strategy of obtaining the intellectual and industrial property rights for the product and process it has developed, and marketing these rights on national and international platforms.

Average Company

Concerning this dimension, an average company in the iMAGE innovation management pool is aware of the need to leverage both internal and external resources for innovation and collaborate if necessary, but does not (cannot) keep both internal and external channels fully open and can only deploy very limited resources (easy to reach, open to all) in the innovation process.

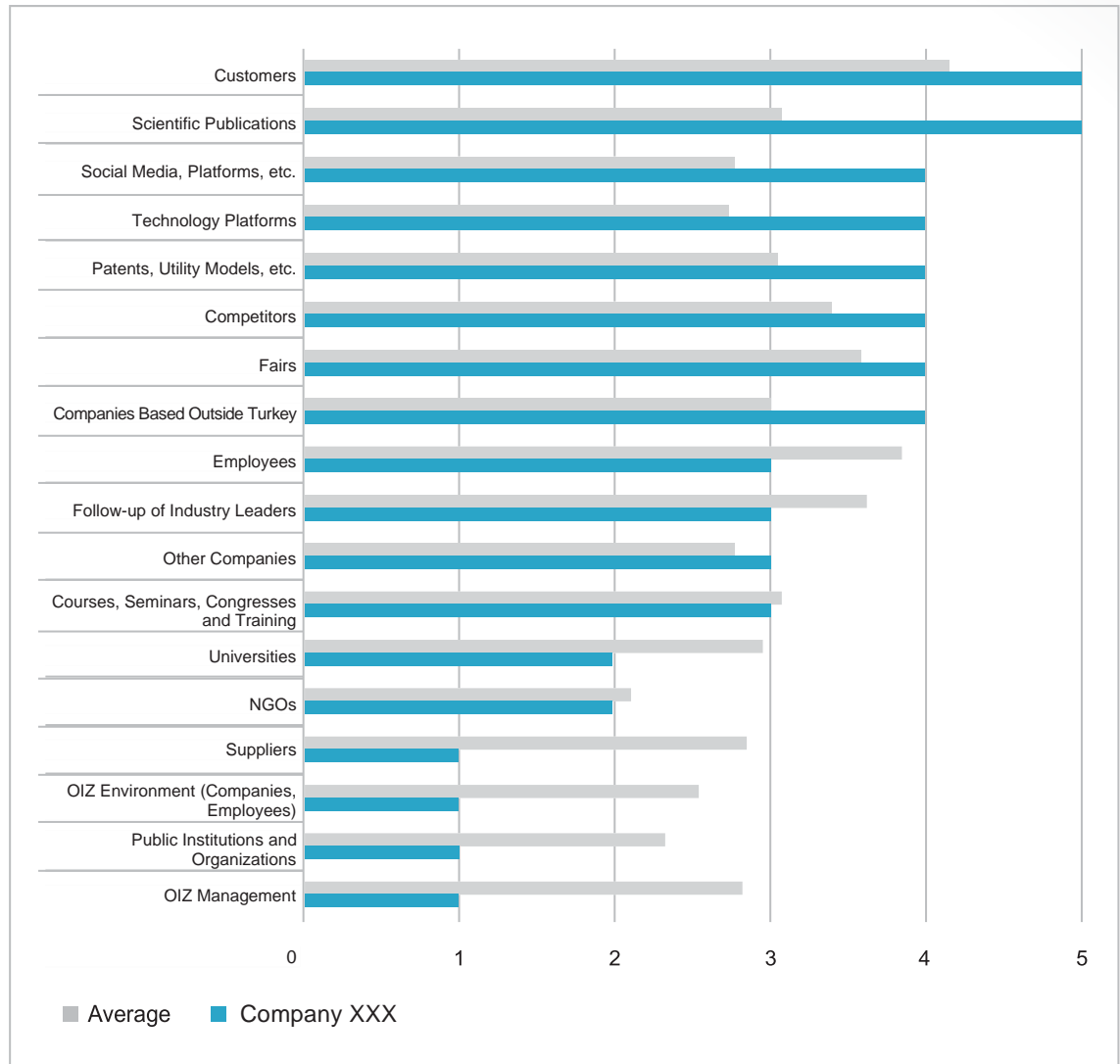
Company Assessment

The company uses a wide range of channels to reach information in its innovation processes (Figure 9). In this context, the company relies mostly on its customers from the automobile industry for innovation, and in particular the main supplier OEM, which provides it with main components and parts. Similarly, it can be observed that the company fervently keeps an eye out for new scientific publications from university databases and often puts the data from such sources to use for its innovation processes. Likewise, it appears that the company draws inspiration from regular monitoring of patents obtained by other companies and their competitors abroad and benefits from structures such as trade shows, social media and technology platforms. It is noteworthy that the company has received a range of consultancy services from the Fraunhofer Institute in particular, Europe's largest practice-oriented R&D facility, from design and prototyping to training, thus mobilizing many innovative processes within the company.

On the other hand, although the company seriously collaborates with universities in problem solving, it does not seem to be inspired by universities to obtain information and be a source of innovation, as shown in Figure 9. Similarly, it is noteworthy that employees who are expected to be the most important sources of creativity and innovation are not effective enough in bringing innovative information to the company, even falling behind the sample average. Then again, it is evident that the OIZ, in which the company operates quite differently from the 27 companies involved in the research, does not receive innovative impetus from its management or from the peculiar conditions of the zone.

The fact that the company as highlighted in Figure 9 is affected by its suppliers at a much lower level than the sample average or even not at all may be related to the fact that the company is already a main supplier due to the type of sector it is in. In general, it can be stated that the company cooperates with external actors and stakeholders, but does not operate a completely open innovation system. In this context, it seems appropriate for the company to shift towards a more open innovation strategy.

Figure 9 | Sources/Channels feeding the Innovative and Creative Thoughts of the Company in the Last 5 Years (By Significance Level)



RECOMMENDATION

It is recommended that both individual employees in the company and teams at universities (including technoparks, accelerators, and incubation centers), which are the main inputs of radical innovation, are utilized to identify innovation opportunities and to create and develop ideas together. By focusing on niche technologies and products, it can be more active in developing collaborations especially with universities. In this context, a more systematic approach can be adopted for establishing and managing collaborations. It is very important to approach universities with a “concrete technological problem” in establishing a line of cooperation. Although a university and company may seem like two different organizations, cooperation in solving a concrete common technological problem can run more smoothly. In this sense, it will be easier to well define concrete technological problems (related to processes or products) and to develop collaborations with stakeholders to solve these concrete problems.

3.4.2. Conceptual Creation

Average Company

In terms of the conceptual creation dimension, an average company in the iMAGE innovation management pool has a free environment to promote the development of concepts and ideas, uses simple methods such as contests for ideas, committees, voting for ideas, etc. in the process of collecting and evaluating ideas, has resources to develop creativity, but is not able to fully see creativity as part of the innovation process or have a full oversight over the outcomes of the creativity process.

Company Assessment

It is understood that the company has the proper resources, as well as physical and cultural environment to promote creativity processes. In this stage, which consists mainly of development and filtering of ideas and their systematic evaluation, the company has a free discussion environment that promotes the development of concepts and ideas, and regular meetings are held for the production and development of new ideas. It is seen that all ideas are tried to be managed in accordance with agile project management systems from the perspective of the project management system.

Although the company benefits from other stakeholders as well as its employees to generate new ideas, it cannot be said that it fully benefits from practices under open innovation.

RECOMMENDATION

"It may be suggested that the company use well-known innovation models such as open innovation to develop ideas. Likewise, the collection of ideas from employees in the company can be done more systematically and a digital structure such as an opinion platform can be built within this framework."

3.4.3. Conceptual Validation

Average Company

In terms of the conceptual validation dimension, an average company in the iMAGE innovation management pool has a well-defined project management and assessment systematics, holds idea development and maturity meetings, and seeks answers in the context of demand conditions, but struggles to follow an exact back-and-forth/skip-over/revisit process between stages.

Feedback mechanisms between project development phases do not fully work, and although there is a well-defined lead user feedback process, the company cannot fully reflect the feedback upon processes. The average company has the resources, knowledge, and technology expertise to prototype its selected projects, but may not be fully successful in managing risk, using different technology acquisition methods, or with prototype development processes.

Company Assessment

While some of the ideas collected and filtered through in the idea development process are eliminated, some of them are transformed into trial projects, with their functionality tested in the field. Ideas/projects past the testing stage are put into practice and prototyped, with trial productions carried out. It turns out that the company sometimes skips the prototyping phase, especially when it comes to projects that improve the process. In this context, it can be said that it follows a back-and-forth/skip-over/revisit process in developing projects. When developing and improving projects and prototypes, not only are the requirements, expectations, needs and standards of customers/OEM taken into account, but innovation projects and prototypes are also created to build up in-house resources and know-how, completely independent of the customer.

Due to the nature of the sector in which the company operates, the company goes down the path of developing technologies such as continuous development of concepts and their presentation for the approval of the customer/OEM in order to maintain its position and be competitive, rather than respond to demands/projects from the main industry/OEM. The company does not exclude customers/OEM or lead users during conceptual validation, operating a joint development and assessment processes.

3.4.4. Solution Development

Average Company

In terms of the solution development dimension, an average company in the iMAGE innovation management pool knows all the procedures and practices for development of new products and services after prototyping, but does not exactly have a systematic approach in the development of new products and services and cannot fully execute steps that are part of the process (market research, competitors' prices, export potential, trial production, testing and certification).

Company Assessment

The company has a systematic approach in the process of developing new products and services. The company carries out all procedures and practices that should be followed in the development of new products and services (market research, competitors' prices, export potential, trial production, testing and certification, etc.) and also initiates processes related to strategic assets such as commercialization and IIPR at this stage.

3.4.5. Putting Solutions into Practice

Average Company

In terms of the putting solutions into practice dimension, an average company in the iMAGE innovation management pool has an experienced team in the sales and marketing of newly developed products and services, yet has difficulties in developing and applying innovative sales and marketing techniques, carries out commercialization largely independently of R&D efforts and R&D units, finds it hard to create an interaction between the innovation process and the marketing process, and has challenges with creating a systematic internal structure for making its newly developed products and processes popular and creating a market. However, its innovation activities are known locally and are sometimes cited as an example of best practice.

Company Assessment

The commercialization, sales and marketing processes of the developed products are carried out in national and mostly in international markets. Equipped with the mantra "Our marketing activity is our engineering", the company attaches great importance to the engineering and awareness process, as it executes its product processes in close interaction with the main industry/OEM, spaced out over a very long period of time, taking into account their requirements and expectations, and in this context, the marketing team works with the trio of sales, quality and engineering teams, whereby engineering (R&D) success is the main tenant.

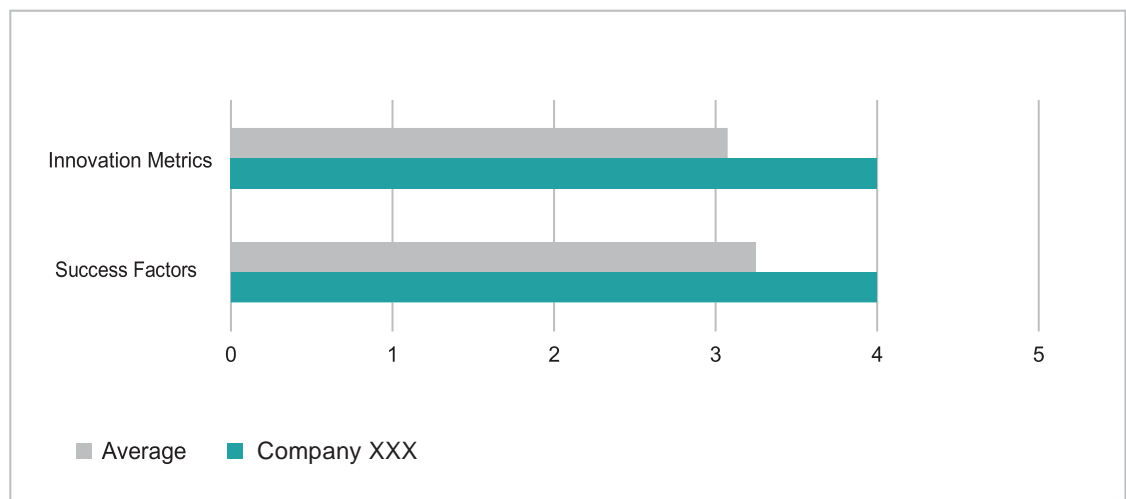
The company is also trying to implement various methods and different sales channels to create a market for the dissemination of innovation, and in this regard is trying to enter new markets, also called "aftermarket", where spare parts alternative to those produced by the main industry and the OEM original part manufacturer are sold. However, this rather emerges as a new area that should be improved which is not in the dimension of marketing innovation. On the other hand, the company has winner awards in various areas, such as digital transformation, but these are not entirely innovation-specific.

3.5. Performance Assessment



The company's maturity level with regard to the dimensions "Innovation Metrics" and "Success Factors" in the main section performance assessment is shown below in comparison with the average values of other companies. Accordingly, **Figure 10** shows that the company has a maturity level above the average of the 27 companies participating in the project in both dimensions of innovation performance. Within the framework of this main axis, it can be seen that the company has a monitoring and assessment system for tracking and developing innovation processes. At the same time, the company has defined verifiable success indicators for tracking innovation results.

Figure 10 | Performance Assessment



3.5.1. Innovation Metrics

Average Company

In terms of the innovation metrics dimension, an average company in the iMAGE innovation management pool uses various techniques to collect information to evaluate the innovation process, tries to use this information in the assessment of the innovation process, but does not have a specific systematic framework to measure and evaluate.

Company Assessment

It can be seen that the company has a monitoring and assessment system for tracking and developing innovation processes. Performance indicators were developed to be taken as a basis during the development of innovative ideas and at the beginning of projects. The company monitors the progress of the innovation process on a monthly basis and evaluates it through financial indicators. Therefore, performance indicators are collected regularly and the innovation process is analyzed. It is seen that there is no impact analysis method to evaluate whether the innovation projects of the company are successful or not. Similarly, it is seen that the company has difficulty in defining innovation processes and outputs in a distinctive way.

RECOMMENDATION

"It is recommended that the company implement various performance metrics and methods to assess the impact of the innovation on the production process, innovation process and the organization, which are to be applied both at the beginning of the innovation project and when a certain amount of time has elapsed since the innovation."

3.5.2. Success Factors

Average Company

In terms of this dimension, an average company in the iMAGE innovation management pool collects information using various techniques to evaluate the innovation process, but has challenges with systematically identifying metrics, indicators, key performance indicators, and tracking the outcome of the innovation process.

Company Assessment

The company has defined verifiable success indicators for tracking innovation results. It evaluates innovation outcomes on the basis of these indicators. There is a system for tracking the innovation process, but it is not an effective and analytical assessment and follow-up method. Therefore, once the innovation is implemented, its short-, medium- and long-term effects on production processes, organizational structure and innovation processes are not fully assessed. But only in this way can the company become a learning organization and transfer its learned experience to other processes. In this context, the impact on the company's organizational processes during and after the implementation of the innovation should be evaluated.

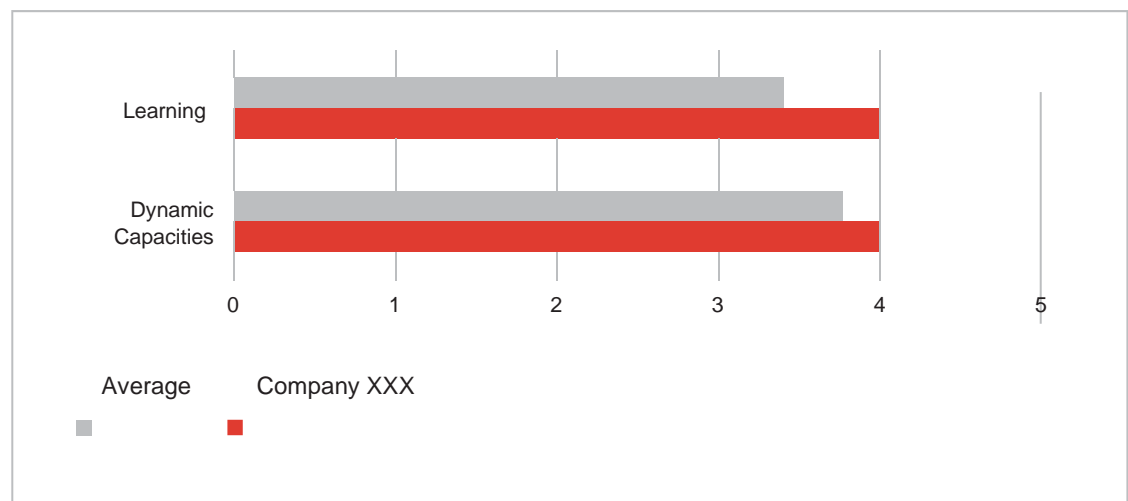


The company's maturity level with regard to the dimensions "learning" and "dynamic capacities" in the main section Improvement is shown in **Figure 11** in comparison with the average values of other companies. Accordingly, the company has a maturity/significance level above the average of the 27 companies participating in the project in both dimensions of improvement.

Within the framework of this main axis, it can be seen that the company internalizes the knowledge and experience gained from innovation processes and tries to transfer the same to other departments. Customer requests and feedback are processed as part of the innovation process. The company tries to adapt to the changing conditions on a global scale in order to maintain its competitive position.

"We are creating a technology road-map that tries to move towards selling services, selling value rather than selling products."

Figure 11 | Improvement



3.6.1.

Learning

Average Company

In terms of the learning dimension, an average company in the iMAGE innovation management pool captures the capacities gained through the knowledge and experience obtained in the innovation process, but can partially use them in the development process of innovation activities, has difficulty internalizing this information and experience, has no systematic approach really for incorporating customer and end-user feedback into the innovation process, facing challenges with revising products and processes.

Company Assessment

It can be seen that the company internalizes the knowledge and experience gained from innovation processes and tries to transfer the same to other departments. In this context, the experience and practices gained in the innovation process had a significant influence both on the company's production and innovation processes and on its organizational structure (for example, its machinery). Customer requests and feedback are a vital part of the innovation process. Customer feedback is taken into account, particularly with regard to improving production and changing innovation processes, and improvements are made as per such feedback where necessary. In this sense, it can be said that the company is constantly recreating its routines. However, it is seen that the end users do not directly contribute to the innovation processes.

It is seen that the end users do not directly contribute to the innovation processes.

RECOMMENDATION

"Methods to directly incorporate end users into innovation processes can be expanded by testing them on selected products in the first place."

3.6.2.

Dynamic Capacities

Average Company

In terms of the dynamic capacities dimension, an average company in the iMAGE innovation management pool can keep pace with changing conditions using an unsystematic method which can sometimes contain complex practices. The company develops short-term solutions that are easier to achieve and can be implemented with fewer resources in the context of adapting to changing conditions. However, the average company finds it difficult to systematically implement strategy development processes by evaluating foreign economic terrain with various analyses in terms of long-term global goals.

Company Assessment

The company tries to adapt to the changing conditions on a global scale in order to maintain its competitive position. Learning from the innovation process influences company routines, but there is no system for managing change in the company (provision of financial resources, provision of human resources and financing to adapt to certain changes). The company sets global goals and obtains advice from global research institutions such as Fraunhofer in line with these goals but remains relatively weak when it comes to complex capacity analyses and company-specific strategy formulations; more precisely, it prefers to develop such strategies and decisions on its own.

Bottlenecks and Recommendations

4.0.

As a result, 19 sub-dimensions in six main sections of innovation management, as anchored in the iMAGE Innovation Management Capacity Measurement Tool, compared the company's current situation, strengths and weaknesses, as well as its maturity level for each dimension against the average values of the 27 companies participating in the project, during the company-specific interview, and the findings were presented in detail.

The scores in the 2nd and 3rd sections of the report above show that the company has an above average maturity level in all dimensions of its innovation management capacity, has a fairly balanced distribution in each innovation axis, exceeds the average of the 27 companies involved in the project, which shows the company's overall innovation management performance is good/successful.

However, this relative success does not mean that the company has no shortcomings, limitations and obstacles in the field of innovation. In this context, it is possible to analyze the internal and external factors that prevent innovation in the company and develop some recommendations for the company by identifying obstacles before the innovation process.

Although what factor determines a company's innovation may vary from company to company, from sector to sector, and from region to region, the factors that influence a company's innovation processes and hinder innovation are generally in-house (Internal) determinants/barriers and external (Geographical Setting/Ecosystem-Related) determinants/barriers.

4.1. Internal Factors Barring Innovation

It is accepted that the factors that prevent innovation come from the company itself, i.e. its unique characteristics, internal resistance, internal deficiencies and constraints are the main obstacles to innovation. Accordingly, in-house determinants/barriers are the company's unique characteristics (such as age, size, sector, ownership), its strategies (such as business/innovation strategy, leadership, R&D and innovation spending), organizational structure (physical, human, social and organizational capital/resources and corporate culture), its collaborations and its core capacities, as well as the issues arising from the innovation processes it pursues.

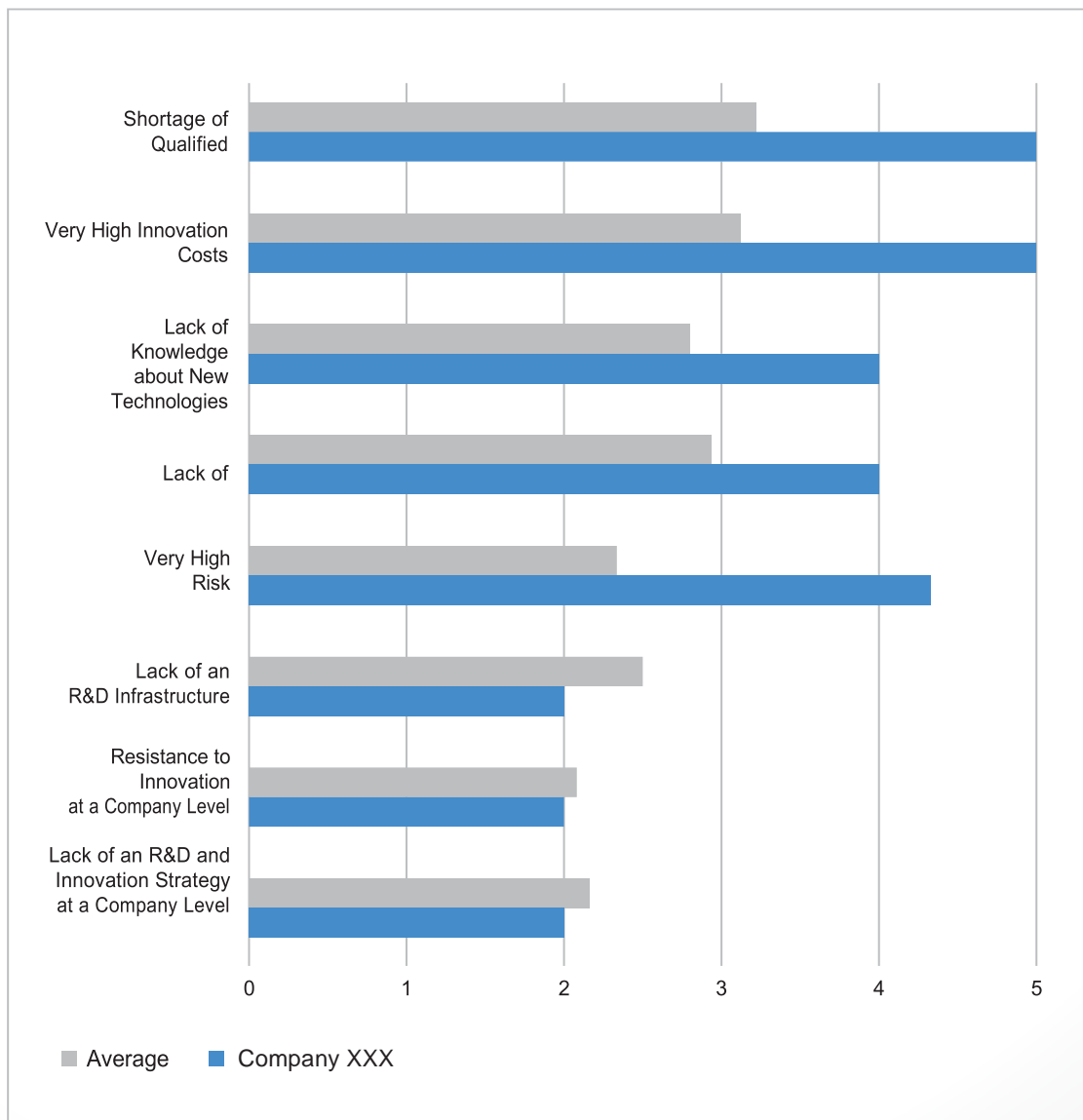
According to the results of the analysis of the data received from the company (Figure 12), lack of qualified personnel ranks first among the internal factors that prevented the company from pursuing R&D and innovation in the last five years. Emphasizing skilled human resources, the most important factor for R&D and innovation, is not a surprise outcome in the context of the world as well as in Turkey, but the fact that it constitutes one of the most important barriers to innovation for a company with an R&D center where 1/10 of employees are engineers shows that the company has severe issues in drawing talented R&D employees.

Similarly, the company points to high innovation costs, insufficient financial resources, while referring to high risks and a lack of sufficient information about existing new technologies, which are among other important barriers for the company to innovate. It is notable that the company was found to be performing well above the average of the 27 companies participating in the program in the areas it identified as problematic. In fact, the following statement from a company representative expresses even more clearly the points of resistance within finance, staff, and the company.

"When we start to talk about the innovation process, management is no longer so keen on innovation when time restrictions and stretched funds enter the picture. We are constantly looking to get incentives, or grants to get projects running."

As a result, the findings indicate that the internal barriers to innovation within the company are of crucial importance, as they have a direct negative impact on the company's innovation and therefore the company should primarily focus on overcoming and eliminating internal barriers.

Figure 12 | Internal Factors Preventing the Company from Engaging in R&D and Innovation Development Activities in the Last 5 Years (By Significance Level)



4.2 External Factors Barring Innovation

In general, the main barriers to innovation at the company level originate from the companies themselves, in other words, internal barriers such as lack of qualification of employees, lack of sufficient equipment, technical knowledge and experience of the company, lack of a suitable innovation climate in the company, and lack of funding for innovation, etc. are recognized as the main factors that prevent innovation. It is assumed that determinants/barriers originating from outside the company, thus resulting from the geographic environment in which the company operates and the opportunities and constraints of the ecosystem, will not significantly affect the company's level of innovation.

But factors arising from external conditions, namely the features of the regional innovation system in which the company is embedded, are also a very important factor for innovation. The dynamics of the national/regional/sector-specific ecosystem such as the conditions, opportunities, features, relationships and assets offered by the geographic region where the company is located, the market structure and competition in that region/country beyond the company's control and the existence of institutional arrangements and incentives are the factors that directly affect the competitiveness and innovation-orientation of both the company and its employees. Therefore, innovation materializes not only with the structure, resources, culture and strategies of the company, but also through the components of the regional innovation ecosystem that holds the opportunities and circumstances specific to the geographical location in which it is located.

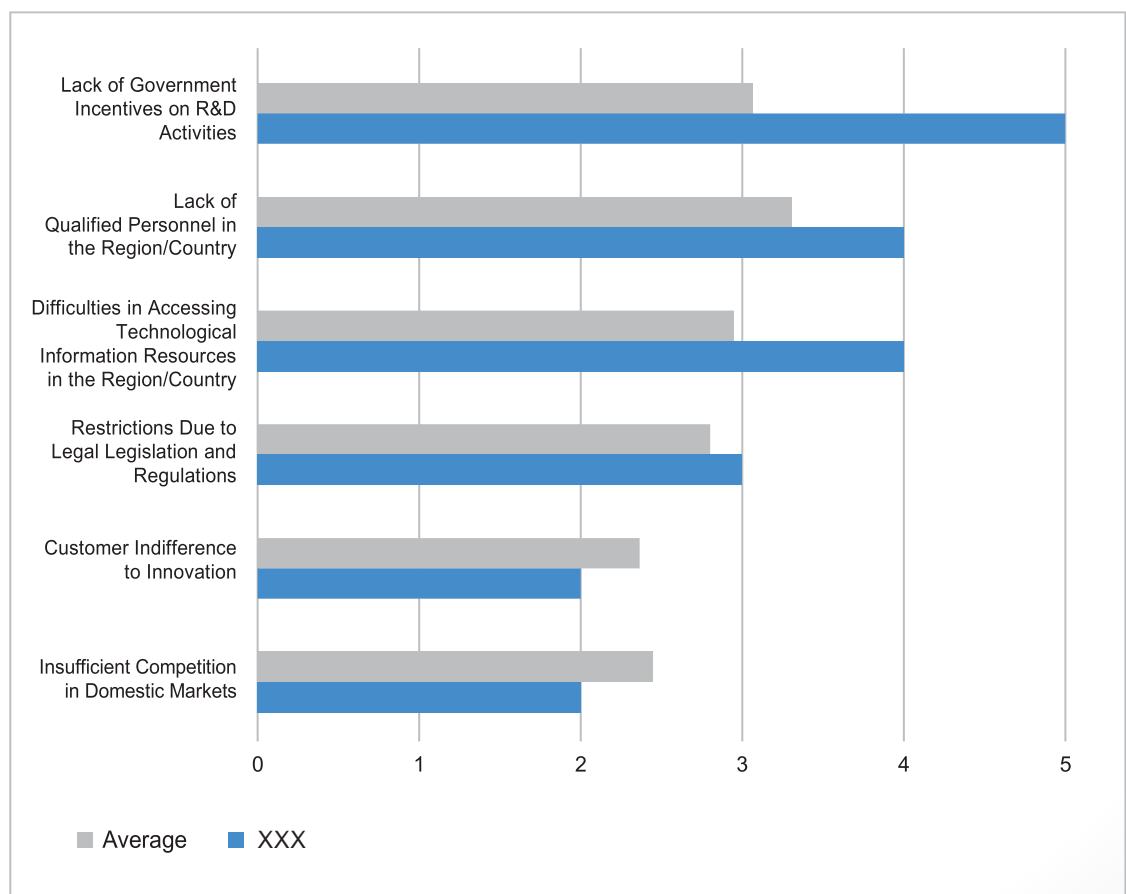
As can be seen, the environment in which the company and its employees compete and perform certain functional tasks positively or negatively influences innovation at the institutional and individual levels. In short, the external sources of impact that supports innovation consist of the opportunities, constraints, and relationships generated by the urban and regional innovation ecosystem.

Therefore, looking at Figure 12, which shows the results of the analysis of the data received from the company, the first of the external factors that has hindered the company's R&D and innovation in the last five years is lack of incentives and support from the public institutions for innovation.

Another important issue that arises from the ecosystem for business innovation is the lack of skilled labor in the region, which is one of the most important factors required for R&D and innovation. In fact, the company sees qualified personnel as both an internal and an important external shortage. Similarly, it is apparent that the ecosystem is as restrictive in terms of access to technological information resources required for innovation as the company itself is. Although the company collaborates with several universities in the region, it sources knowledge, design and technology transfer required for innovation from foreign institutions such as Fraunhofer.

Finally, it should be noted that the company also has doubts about the adequacy of existing laws and regulations for innovation, emphasizing that more legal frameworks are a limitation, putting it above the sample average in terms of its perspective.

Figure 13 | External Factors Preventing the Company from Engaging in R&D and Innovation Development Activities in the Last 5 Years (By Significance Level)



In fact, the entrepreneurship ecosystem in Turkey, compared to developed countries, and the shortcomings of the regional innovation system in the İzmir-Manisa region have a negative impact on the realization of the company vision.

"For all the technologies that we are going to develop, it is set in stones in what year and how much we are going to invest, how much personnel we are going to recruit, what technologies we are planning to invest in, and their financial parameters, but even so, that vision can sometimes go down the drain also because of the climate in the country. "

On the other hand, considering parameters such as the lack of competition the company faces in the market and the weak innovation expectations of customers, these two external factors do not seem to be barriers to innovation due to the dynamics of the automotive supply industry in which it operates and the motivation of the company to position itself.

In fact, the company states that these two factors are rather insignificant, way above the average of the sample, arguing the competition is very intense and customers/OEM are actors who constantly expect innovation in the sector it operates in. Therefore, the company adapts to these external market/competitive conditions more than other companies.

4.3. Recommendations

In the 3rd section of the company report focusing on 19 sub-dimensions in six main axes of the company's innovation management capacity, there is a thorough assessment of what the company needs to improve in all dimensions related to innovation management where it has shortcomings and deficiencies, as well as recommendations in addressing these.

Here the recommendations for the company in the context of the six main axes of innovation management capacity, namely "leadership and intent", "organization", "planning and support", "process", "performance assessment" and "improvement" are summarized.

Accordingly, under the "leadership and intent" axis, top management can be made to have more awareness and show more leadership on the topic of innovation. The company's access to international R&D and innovation funds can be facilitated. In this context, the effectiveness of joint R&D and innovation activities can be enhanced through increased interactions with international companies. Similarly, it is suggested that the company reduce the weekly workload of R&D employees, at least slightly, and create more time for them to do innovative work away from routine work.

Within the framework of the "organization" axis, it is necessary to develop the workforce, the innovation capacity of personnel and within this framework to establish a more effective reward-incentive system; and put in place a performance assessment and merit system platform to push employees towards a common goal in a more systematic and efficient way and allow them to compete with one another. In addition, the company can be more active in cooperating with start-ups, pursuing various methods ranging from joint projects to implementing the start-up idea within the company, and it can also support its business with an open innovation model.

***"Individuals in all departments have an innovative approach...
Because top management expect it, but what we do tends to remain on a
departmental or unit basis. We need guidance on how to approach innovation from
a more corporate perspective and influence the company culture a little bit more, in
the context of collaboration and establishing the right channels."***

Under the "planning and support" axis, it is recommended that an innovation strategy and a road map to innovation be drawn up with internal and external stakeholders to strengthen the company's global competitiveness, and that the company position itself as a "learning organization". In addition, it is recommended that the company improve its IIPR processes and analyze the collected data using more analytical methods to adapt to changing conditions.

"We need to give the road map a more predictable and systematic character, or build a mechanism around interdisciplinary collaboration, and I think doing so can take us a step further.

If we can get that mechanism working for the next stage, where we push the process forward using our own resources or an incentive mechanism, I think this might also help push us further.

We need to design such process, and communicate it to employees and top management."

On the "process" axis, it can be recommended for the company to use well-known innovation models, such as open innovation, to identify innovation opportunities and guide the process for generation of new ideas. In this context, the company can benefit from its employees and university contacts, and build a digital platform where opinions are pooled together.

In the context of "performance assessment" and "improvement", it is recommended that the company implement various performance metrics and methods to assess the impact of the innovation on the production process, innovation process and the organization, applied when a certain amount of time has elapsed since the innovation.

"We need help defining ourselves.

I think we need support on what is P&D, what is R&D, what is an innovation project, what methods to employ, what the steps should look like, how to distinguish between them, and what the related process road maps should look like."



INTRAC

MANİSA INDUSTRIAL PARK

Innovation, Networking, Technology,
Research and Application Center

info@intracmip.com
+90 (236) 233 18 16 (Extension: 191/192)



"This report was prepared for the company as part of the Manisa Organized Industrial Zone Innovation Center's Innovation Program. Its sharing with third parties is subject to the permission of the company."