



# Micro-multinationals: An Opportunity for Science Parks

KAUST Research and Technology Park Example

## Abstract

Micro-multinationals are small firms that engage in international business early in their lives. Numerous social, technological, and economic factors contribute to the recent spread of Micro-multinational phenomenon

Loay Alfi, Business Development Manager  
Omar Khasawneh, Business Development Specialist

Business Development Team  
Industry Engagement Office



## Contents

1. Executive Summary .....	2
2. Introducing Micro-multinationals.....	2
3. Major Enablers .....	2
4. Micro-multinational Formation .....	3
5. Advantages of Born-Global Firms .....	4
6. Challenges of Born-Global Firms .....	4
7. Micro Multinationals Support at KAUST Research and Technology Park.....	5
7.1. Background .....	5
7.2. Support for Micro-multinationals.....	6
8. Case Studies .....	7
9. Conclusion .....	9

## 1. Executive Summary

Micro-multinationals are small firms that engage in international business activity shortly after their creation. Numerous social, technological and economic factors have contributed to the recent spread of the Micro-multinational phenomenon.

There are many advantages in establishing a Micro-multinational startup. The startup can easily utilize global talent across multiple markets, have a better opportunity to obtain funding and have direct access to multiple markets. If structured properly, Micro-multinationals can also achieve tax savings that will improve profit margins.

The aforementioned advantages do not come without a price. Significant legal consultation is needed to operate optimally across multiple jurisdictions, communications between offices can be expensive and operating on a limited budget is often the norm.

Science Parks can facilitate the creation of such born-global firms by providing the right environment and services to mitigate these main challenges. These services can include providing different funding options, help with local market access, mentorship support and government/legal support.

## 2. Introducing Micro-multinationals

Micro-multinationals represent a sub class of Small and Medium Enterprises (SMEs). These born-global firms operate in niche spaces and are usually very specialized. Their key defining characteristic is early engagement in international business activity: they are usually born global from day one. International engagement can often take different forms.

The second defining characteristic is their small size. Small is best understood in the context of traditional multinational companies, which typically have been large corporations. Micro-multinational companies are usually defined as being between two to 25 employees and engaged in international business during the first two years of their operations.

## 3. Major Enablers

The concept of born-global companies or Micro-multinationals has been around for a while, but these firms have expanded rapidly in recent times. There are a number of enablers that led to this new trend.

### a. Ease of Communication

Video conferencing used to require expensive systems and fast Internet connections. Today, university students use free tools such as Skype (which is a born-global firm) or other free tools to hold virtual meetings and share documents.

### b. Emerging Markets and Talent Distribution

Locations known for their innovation and entrepreneurship ecosystem are no longer the only hot markets for startups and creative products. New emerging markets present a great opportunity in terms of market size and quality of talent. This has encouraged movement in both directions and opened the door for born-global companies.

### **c. Cheaper Transportation and Supply Chain Development**

Liberalizations in world trade and improvements to mass transportation have significantly reduced the burden of shipping materials between countries. Lower barriers to entry for international exports have made it possible for smaller companies, running on tight budgets, to enter new markets.

### **d. International Trade Agreements**

More countries are signing international trade agreements that lower or eliminate tariffs on foreign products and significantly reduce non-tariff barriers. Entities such as the World Trade Organization put huge efforts into facilitating the free movement of people, good and services across borders.

### **e. Market Globalization (homogenous markets)**

Globalization has touched peoples' lives everywhere. Although cultural differences still exist, tastes have converged in many areas. Ideas that succeed in one culture can be copied to other cultures and find similar success. This takes away the costly need of creating different products for different countries. Many niche, born-global companies take their products with minor modifications to new geographies successfully.

## **4. Micro-multinational Formation**

Going global after formation may not seem natural. A number of factors can explain why this happens with Micro-multinationals. Here are the most common ways a Micro-multinational is created.

### **a. International Partners**

The chance for creative collisions between entrepreneurs across the world has become commonplace. Students travel across the world to study in globally-renowned universities. For example, global MBA programs attract talented, business-minded people from around the world. In many cases, graduates from these international programs start a business together and expand to one of the founders' home countries in order to leverage an existing support network there.

It is interesting to contrast this early internationalization with the classical Multi-national company that usually expands to countries with similar social factors to the domestic market of the company, such as language, culture and business practices. These factors, although important to consider, are not very relevant when part of the company's DNA belongs to the new geography.

### **b. Startup Joint-ventures**

Promoting entrepreneurship is becoming increasingly popular all over the world. Events that attract startups from all over the world are held regularly, not to mention digital market places for startups. Natural synergies can be spotted immediately between startups that may result in micro-mergers and the birth of global companies.

An interesting case study from KAUST's Research and Technology Park (KRTP) is Acadox -- a KAUST startup in the space of digital document management. A team from KAUST was discussing a soft-landing package for a Turkish company that provides Learning Management Solutions. They are considering expanding into the Saudi market and a KAUST team member spotted possible synergies. The two companies were introduced and discussions are underway to join forces. This case study will be elaborated on further later in the paper to explore the role of science parks in similar situations.

### **c. Exporting**

In this globalization mode, there is a strong potential that a startup may face a "Product-Market Mismatch." This is when the company's product does not have a significant domestic market.

In previous decades, innovations and new products came from few sources (countries) known for their advanced innovation ecosystems. Many places in the world have now caught up, but not all. Education seems to be a top priority for many nations. Excellent universities are no longer an exclusive domain of

a lucky few. There are also a number of online learning opportunities. This has led to pockets of creativity all around the world. However, many of these innovation pockets are faced with the discontinuity of the ecosystem as their products do not have a real market domestically. This reality enforces a global mindset from early on and results in a global company.

One case study from KAUST's Research and Technology Park is ENSYAB. ENSYAB has a product based on a patented algorithm and communications protocol that enables better performance under certain network configurations.

ENSYAB's product was a direct result of research done by one of KAUST's prominent faculty and his post-doctoral fellow. In designing the commercialization strategy, it became obvious that the technology was deeper than typical application level technologies that can easily find customers in the domestic market. Therefore, part of the commercialization strategy was to find a sales front-office in the Silicon Valley and/or establish a partnership with a related startup in Europe or the USA.

Today, the company has already entered a partnership agreement with a US-based company before selling anything domestically.

#### **d. Foreign Subsidiaries**

This traditional method is not solely owned by large Multi-nationals. However, it is not popular with born-global companies, simply because these companies are limited in their financial resources. However, some of these born-global companies have niche products with strong competitive advantages. In such cases, the market in any one place may not be big enough, and sales in other markets are very similar to the domestic market in terms of process; foreign subsidiaries are the answer to this.

### **5. Advantages of Born-Global Firms**

Generally speaking, born-global firms benefit from the advantages of small companies while benefitting from privileges previously available to only large multinationals. As small companies, these born-global Micro-multinationals are flexible and can respond quickly to market changes. They are also closer to customer feedback and can implement changes without going through layers of bureaucracy. Additionally, costs can be kept under control with less overhead than larger firms. The following advantages are far from the reach of traditional small companies.

#### **a. Access to Multiple Markets**

Born-global firms have access to a wider market. This, obviously, is an opportunity for faster growth. It is also an insurance policy in case things do not work well in one market. This is much needed in the typically risky initial phases of any company's life.

#### **b. Access to Wider Selection of Talent**

Micro-multinationals are specialized firms. They usually operate in niche spaces. This also means they are in need of specialized talent. Operating in multiple markets gives access to pockets of talent that are out of reach for companies operating in one geography.

#### **c. Exploit Global Variations in Labor Costs**

This is a form of 'geographic arbitrage' that provides Micro-multinationals with the option to locate their different functions in locations that provide competitive advantages. The advantages can be related to costs, talent or even logistics.

### **6. Challenges of Born-Global Firms**

Challenges faced by born-global companies are inherent to the differences between these companies and the traditional multi-national companies. These challenges generally revolve around four factors: lack of financial resources, no established brand image in the home country, little management experience and the need to deal with different government barriers and trade laws.

#### **a. Lack of Financial Resources**

The global-born firms face a double challenge in terms of the need for financial resources. Not only are these companies in need for money to grow and attract talent, they also need to do this in multiple markets.

No matter how small a firm may be, engaging in international business imposes serious financial pressures including legal establishment fees, real estate expenses and much more. The most noted effect of this pressure will normally show in a reduced R&D budget. This is a paradox as these companies are typically based on innovative ideas and need a continuous pipeline of creative ideas in order to survive. Since these companies are typically in a very early stage, securing external investing is not an easy task.

#### **b. Trade Laws and Different Government Regulations**

Legal procedures are complicated enough in one jurisdiction. Born-global firms have to deal to legal and trade regulation across different countries. Adhering to such regulations can be complicated and expensive.

#### **c. Lack of International Management Experience**

Born global firms face some of the greatest business challenges: going international. Management literature is full of stories about well-established companies that failed in breaking into foreign markets. Born-global firms are often led by young entrepreneurs who have limited international management experience.

#### **d. Absent Brand Image**

Unlike large multinationals, born-global companies have not yet established a brand name in their domestic markets. This complicates the task of growing in multiple geographies. Without the asset of an already established brand, each new location is a start from scratch.

### **7. Micro Multinationals Support at KAUST Research and Technology Park**

#### **7.1. Background**

A very important component of KAUST's innovation ecosystem is its Research and Technology Park. The Park is an integral part of the KAUST campus and community and over 2.7 million square meters in total size.

Currently, companies located in the Park and partnering with KAUST include Boeing, SABIC, Nalco, Saudi Aramco, Cray, SEC and Dow as well as many KAUST-born startup companies.

The Park has a convincing value proposition. The location of the park provides easy access to the nearby international airport in Jeddah, King Abdullah Economic City (KAEC), and two sea ports. The park is fully integrated with KAUST with its unmatched world-class research facilities, excellent local and international talent pool and diverse community. The park offers ready-to-use real estate with full business services.

The Park provides a unique ecosystem within the Kingdom for R&D corporations, SMEs and startups that are developing new technologies for Saudi Arabia and the Middle East, enhancing the Kingdom's mission of diversifying its economy.

The Park provides such an environment for technology-based businesses to access the University's laboratories, technology development facilities, and faculty and student talent. It has an attractive network of public spaces and facilities designed for creative collision and knowledge-sharing.

## 7.2. Support for Micro-multinationals

Supporting small companies, as part of focusing on the SME sector, and creating new knowledge-based companies is at the core of KAUST Research and Technology Park's strategy. KAUST realizes the importance of innovative SMEs as an engine of growth and job creation for every economy.

As a new Research Park in a nascent innovation ecosystem, KAUST realized the importance of connecting with international innovation ecosystems. Being global is not an option, it is a key part of the University's success. In order to support the creation of born-global firms, and in order to attract and nurture those companies, the Park has the following initiatives in place.

### a. Creating a Multinational Entrepreneurial Environment

KAUST's Research and Technology Park is an integral part of KAUST campus. KAUST has a strong policy that believes in the power of diversity and the importance of supporting creative thinking. KAUST's student body has more than 80 nationalities. About 35% of students are Saudis, and the rest come from all corners of the world and are encouraged to explore, research, and innovate without thought to borders. As a result, KAUST's global-vision startup rate is very high.

### b. Financial Support for Early Stage Companies

The KAUST Innovation Fund supports the University's pipeline of technology-based startup projects and companies. It also invests in high-profile international technology companies willing to establish their operations in Saudi Arabia and to benefit from synergies with KAUST research activities. The Fund encourages companies to have a minimum of two partners: a local Saudi partner and an international partner. This reflects KAUST's belief that innovation is global and that the niche companies created on campus are born-global ones. Today, about 90% of the Fund's companies have international partners on board. The Innovation Fund is currently managing a portfolio of more than 15 startups and has adopted a hands-on approach to ensure their success. The Fund intends not only to provide the financial resources needed by a startup to grow, but also aims to be a long-term strategic partner providing operational support.

Financial support can take forms other than direct funding. The Research Park offers subsidized office and lab space for knowledge-based small and medium sized companies. In many cases, for certain value-added industries, free space for two years is provided.

### c. Business Development Support

In absence of a long track record and a strong brand name, the task of acquiring customers in new markets for born-global companies is not an easy one. KAUST, through a dedicated Industry Engagement Office and a Business Development team, has established a very successful KAUST Industry Collaboration Program. The program today involves 38 major companies and government entities that represent key players in the local Saudi market. Each company is assigned a dedicated Industry Collaboration Officer who understand the company needs and future plans. Based on this understanding, the Business Development team attracts small, innovative companies and makes the introduction between small and large companies. This proactive approach opens the market for all innovative companies, regardless of the location, to operate in the Saudi market and take their business internationally.

KAUST markets the tenants of its park at international events and conferences. KAUST's Innovation and Economic Development Department participates in numerous events internationally and often encourages tenant companies to accompany them. Often, companies do not need to pay fees for attending because they use KAUST's own booth and extra delegate passes.

#### **d. Formal Mentorship Programs with Solid International Experience**

Starting a business requires more than just good ideas. It takes careful planning and foresight, market knowledge, funding and ongoing support. KAUST helps entrepreneurs at all stages of the process from ideation to launch to funding and beyond. The University also helps inventors protect and commercialize their inventions. KAUST is particularly interested in supporting new ventures that are aligned with the university's research activities and that will have great local and global impact.

Training and mentorship is offered regularly to entrepreneurs both on and off campus, including scientists and students looking to spin out their inventions into new companies.

Realizing the importance of international connections, KAUST has a network of international mentors who have allocated a portion of their time to advise early-stage companies. The international mentors interact with entrepreneurs remotely but also through frequent visits to KAUST.

The Innovation Fund, once invested in a company, provides more than financial resources. The Fund takes a hands-on approach and aims to be a long-term strategic partner providing operational support. This conscious decision is an attempt to compensate for the lack of management experience in Micro-multinational companies the Fund invests in.

#### **e. Collaboration Agreements with Other Science Parks**

Science parks are a source of innovative, small companies. Companies located within these parks are also prime candidates to become Micro-multinationals. KAUST takes a proactive approach in creating and attracting companies who may be unaware or reluctant about expanding into a new market.

KAUST has reached out to international science parks, most recently in Turkey. In an effort to support companies looking to break into a new market, KAUST offers an agreement providing companies free space in the park for six to 18 months along with the accompanying administrative and government processing support. Most science parks were open to the agreement and offered similar terms for KAUST companies. This way, parks become the gate for Micro-multinationals to enter new markets and a catalyst in creating them.

#### **f. Support with Government Processes and Legal Procedures**

This service was established to support small international companies break into local Saudi market. As previously highlighted, navigating legal issues is not an easy task for small companies with no previous knowledge outside their domestic market. KAUST realized this challenge and today the University facilitates the incorporation of new companies operationally and financially.

### **8. Case Studies**

The following case studies demonstrate many of the topics covered in this paper, including the method of creation for Micro-multinationals, the type of niche products they offer and the role of science parks in creating these companies.

**a. NOMADD:** *a case on creating the right international environment, encouraging innovation from all sources, providing funding and business development support*

NO-water Mechanical Automated Dusting Device or 'NOMADD' is a smart and ecological desert solar panel cleaning system. The technology was developed at KAUST by NOMADD's founder-- an Australian scientist living in KAUST's community. After coming up with the idea, the founder got business training and mentorship from KAUST. KAUST then helped NOMADD to patent the technology, and provided the company with \$200,000 in seed funding from the Innovation Fund. NOMADD accompanied KAUST to a number of events and was given the opportunity to pitch and showcase whenever international visitors came to the University. Today, NOMADD has less than 10 employees, but it sells in Jordan, Bahrain, and entered in partnership with one of the biggest Saudi companies.



**b. Modus: a case on multinational partner formation and attracting specialized international talent**

MODUS is an excellent example of a born-global micro company. It is also a true demonstration to the role of science parks in creating and facilitating the life of such companies.

MODUS is a fully integrated technology development and drilling services company. MODUS started with two offices: one at Qatar Science and Technology Park and in the city of Muscat in Oman. The reason behind that is that one founder is a professor at Texas A&M University in Qatar, which is located next to the science park, and the other founder is an Omani citizen.

To leverage the talent and research capabilities present at the research park in Qatar, the product design and development takes place there while the manufacturing of the products is done in Oman, which is also where the company won its first contract.

The company has special knowledge in materials and control systems. Through an academic relationship of one of the founders, the company hired three research scientists with similar experiences in Athens, Greece. This became the third location of the company.

KAUST team met with MODUS management at a regional business event. The MODUS team were very excited about opening an office at KAUST's Research and Technology Park, especially the opportunities to leverage the talent available on campus and the business relations with oil and gas industry tenants. Moreover, KAUST offered support for MODUS in government processing and discounted office space.

Currently, KAUST is processing an application to get MODUS into the Park. This will be MODUS's fourth office although the company has less than 12 employees and is only two years old.

**c. Acadox: a case on an international startup joint venture**

Acadox started as a document management system startup at KAUST. The company received financial support and expanded gradually until they secured investment from a prominent local venture firm. At a recent event, KAUST's Business Development team met with an early-stage Turkish company that provides E-learning solutions. The company was interested in exploring opportunities in the Saudi market. KAUST realized the possible synergies with Acadox and made an introduction suggesting a merger or a joint venture.

The two companies are now in discussion to announce soon the birth of new Micro Multinational based on a merger between two startups in different countries. This example demonstrates further the role of science parks in catalyzing the creation of such micro global companies.

**d. CT Pharma: a case on business development support, financial incentives and niche products**

CT Pharma is an example of how niche born-global companies with high specialization can lead to global expansion. CT Pharma is contract manufacturers for generic drugs. The company has 11 employees and is less than two years old, but is already selling in Turkey and Germany.

CT Pharma has a strict policy of exclusivity. When it develops a generic drug for a company, the formula and process will not be reused for any other customer in the same country. The company had big demand such that it built a large portfolio of generic drugs. However, this big portfolio cannot be utilized in the same country of development.

The natural next step for CT Pharma was to look to other markets to leverage its assets. CT Pharma has an office in one of Turkey's prominent science parks. This made the founder aware of the value that science parks can provide in establishing the company's new office.

KAUST offered CT Pharma a favorable deal that reduced the cost of opening a new office at KAUST to a negligible amount. KAUST officials introduced CT Pharma management to one of the major pharma

companies in Saudi Arabia even before the new office officially opened. Moreover, KAUST is handling the government processing for incorporating CT Pharma locally.

## 9. Conclusion

The phenomenon of born-global, Micro-multinational companies is on the rise. These companies are small in size, young in age and are engaged in international business activities from the onset. The continuing development in technological and social trends will only foster the growth of these companies. Ease of communications, online selling, advances in logistics and transportation, the rise of new markets and talent pools and declining barriers of trade between countries are the most notable trends that continue to fuel the birth and growth of Micro-multinational companies.

Born-global companies enjoy access to multiple markets, can tap into pockets of talent in different places, and are flexible enough to respond to market needs quickly. These advantages are balanced by the financial, experience, legal and branding challenges.

Micro-multinationals come to existence through different channels. Having international partners, where two or more entrepreneurs found a company, increases the chance of going international early in the life of a firm. Joint ventures between startups that have strong synergies is another way of going global early on. Having an export focus and taking advantage of direct subsidies are other attributes seen in forming Micro-multinationals.

Science parks and areas of innovation can play a significant role in facilitating the birth and growth of Micro-multinational companies. Providing funding, or access to funding, to these companies can help them overcome the financial limitations they face. Funding can take the shape of soft-money as well, - such as reduced rents and subsidized services. Science parks can also provide Micro-multinationals with access to local markets through business development services and networking platforms. Science parks are also a meeting point for entrepreneurs and innovators. This can be leveraged to enhance creative collisions between young startups to exploit possible synergies and collaboration. Mentorship programs and support with legal processing in local markets can, as well, benefit those companies and contribute to their success.

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