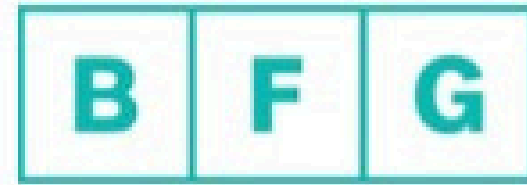
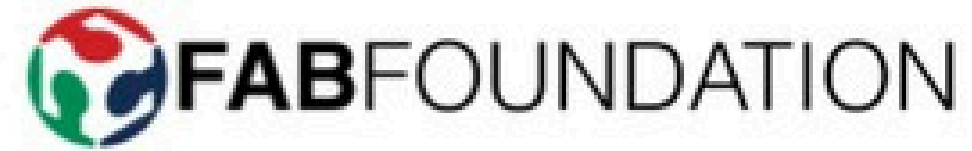


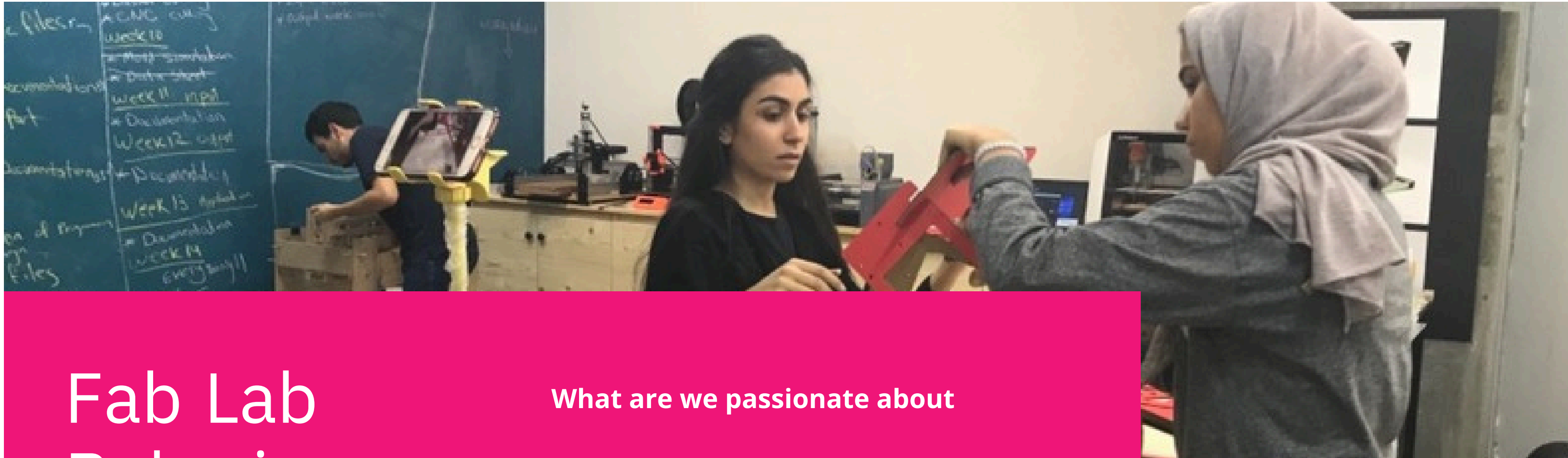
# Fab Lab Bahrain

[team@fablab.bh](mailto:team@fablab.bh)



# Partners & Clients



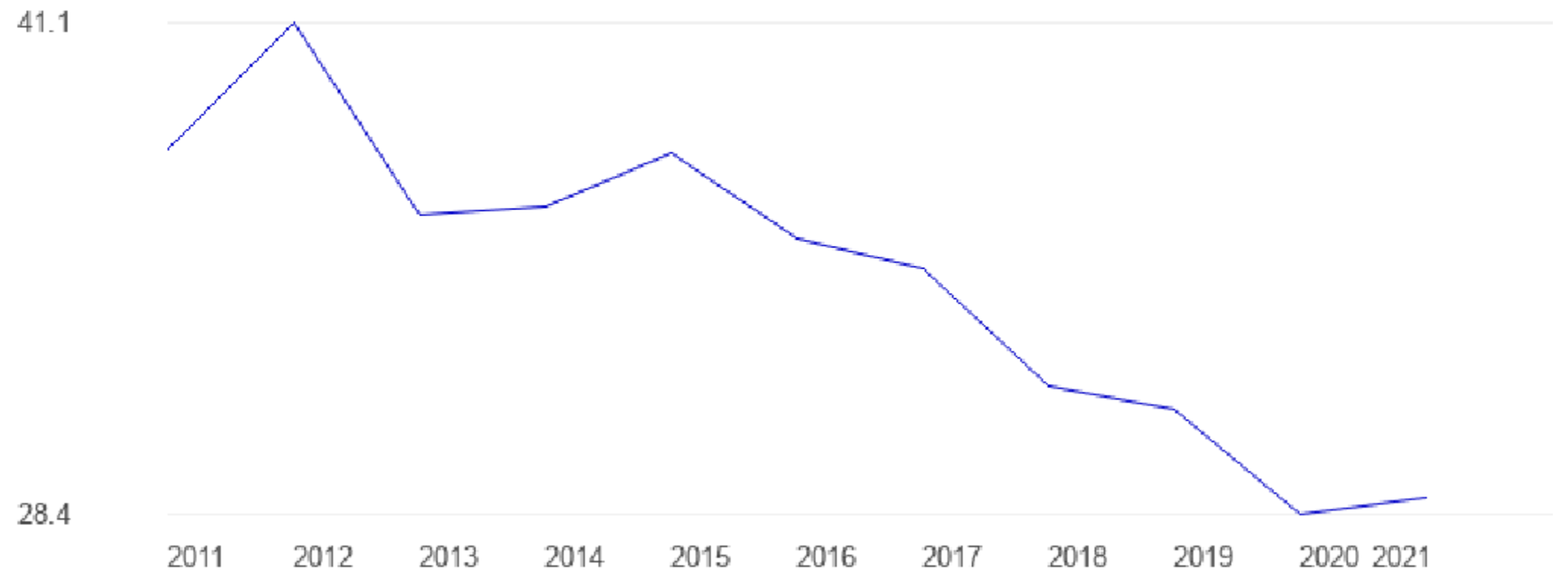


# Fab Lab Bahrain

## What are we passionate about

We provide individuals and organizations with skills and technologies to convert their ideas and challenges into tangible physical products and solutions.

# Global Innovation Index



Global innovation index of Bahrain fell gradually from 41.1 index in 2012 to 28.8 index in 2021.

innovation input

63

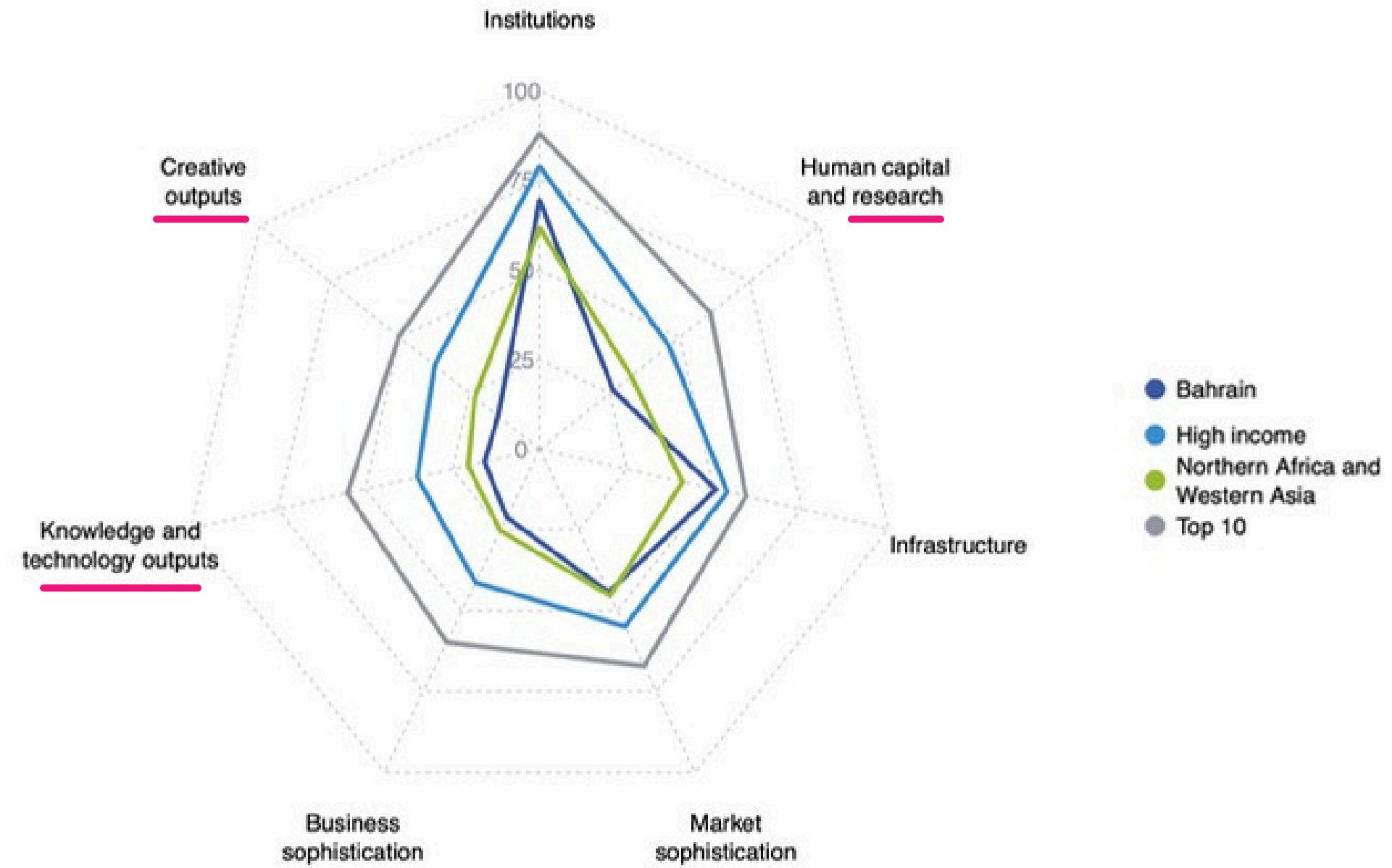
Bahrain ranks 63rd in innovation inputs, the same as last year but higher than 2019

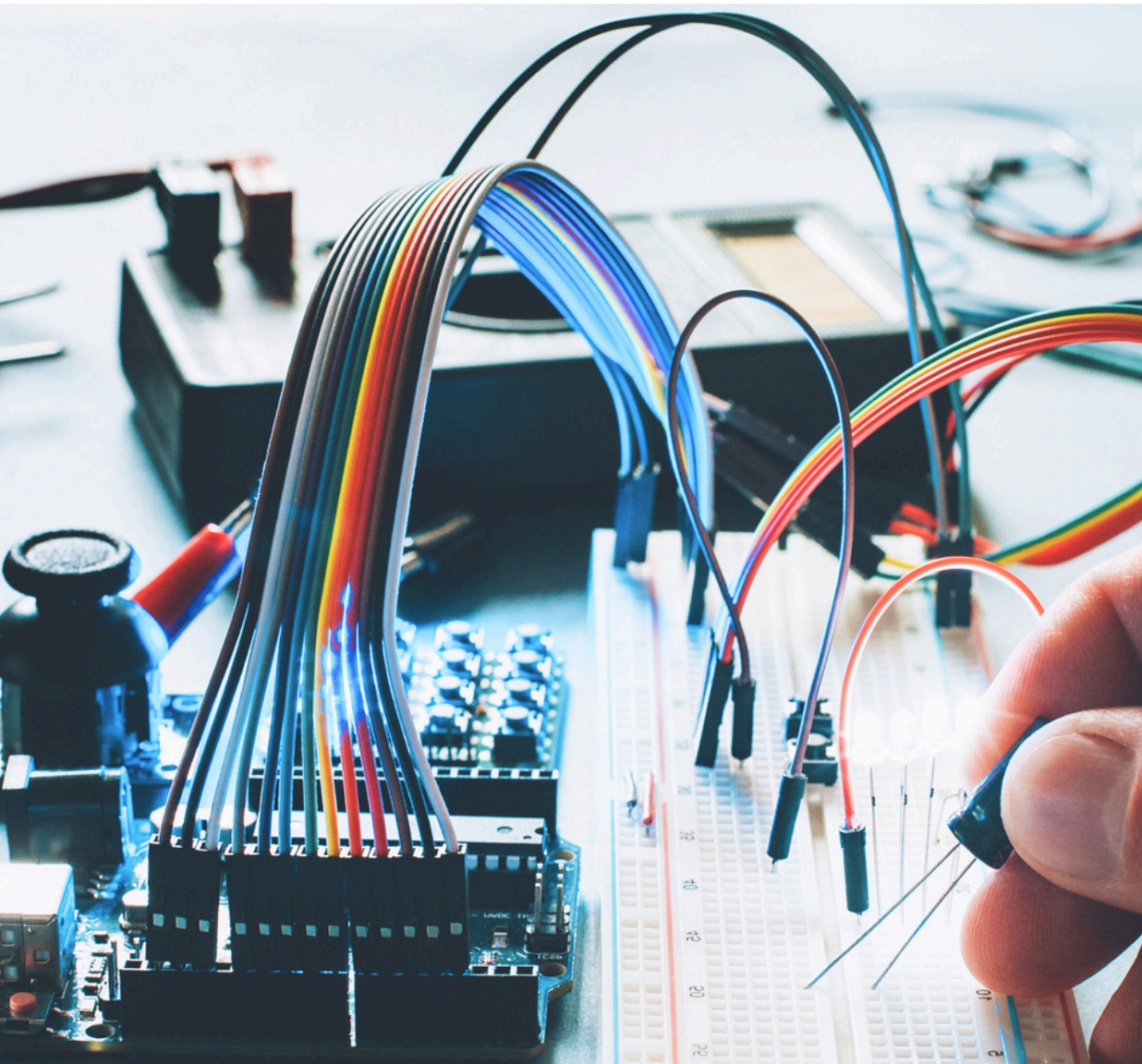
innovation output

99

As for innovation outputs, Bahrain ranks 99th. This position is lower than both 2020 and 2019

## The seven GII pillar scores for Bahrain





# Vision

Building the Technology Industry Leaders of the future

# Mission

01

Empower Bahrainis with skills in product development, digital fabrication and advanced manufacturing

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02

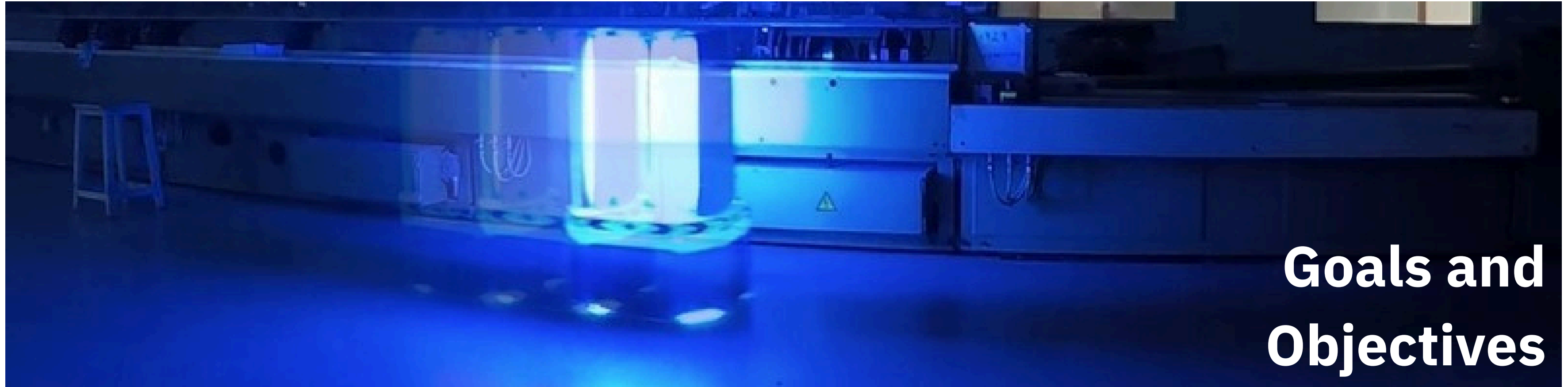
Contribute in building the national technological capacity for creating hardware products.

==

03

Support entrepreneurship to drive commercialization, export opportunities and economic growth

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# Goals and Objectives

## A Alignment of Targets

Engage with all public and private Stakeholders by providing global perspectives, on ground insight, customizing training and increasing the adoption of new manufacturing technologies.

## B Building Skills and Capacities

Design and curate training programs in global distributed learning models, to build advanced knowledge base and human capital in new manufacturing and product development technologies.

## C Cultivating Research Culture

Support and Initiate research activities with both academic and industrial partners, and build platforms that support specific research directions.

## D Develop Impactful Products / Projects

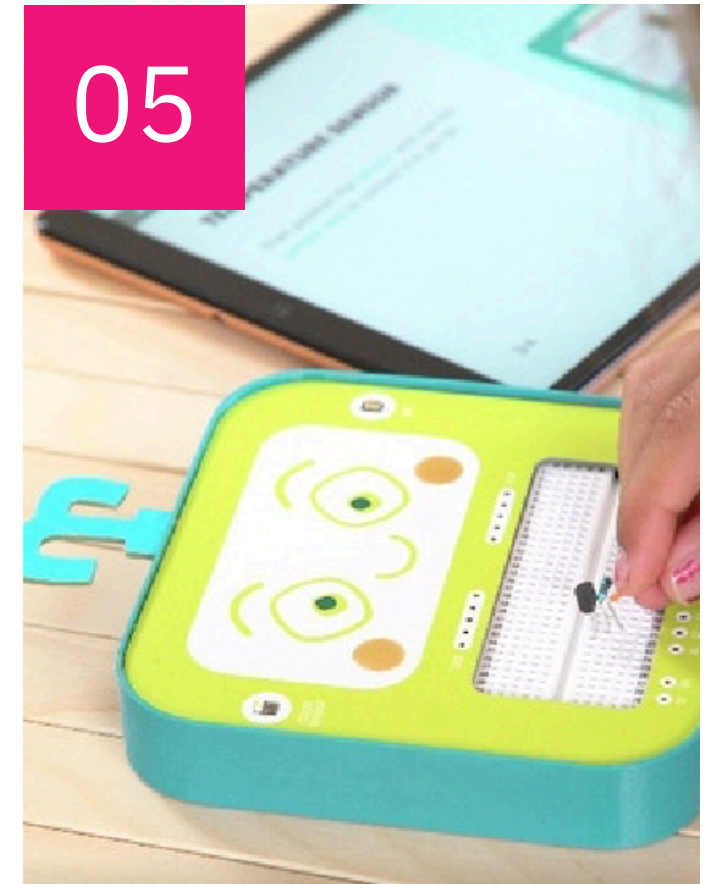
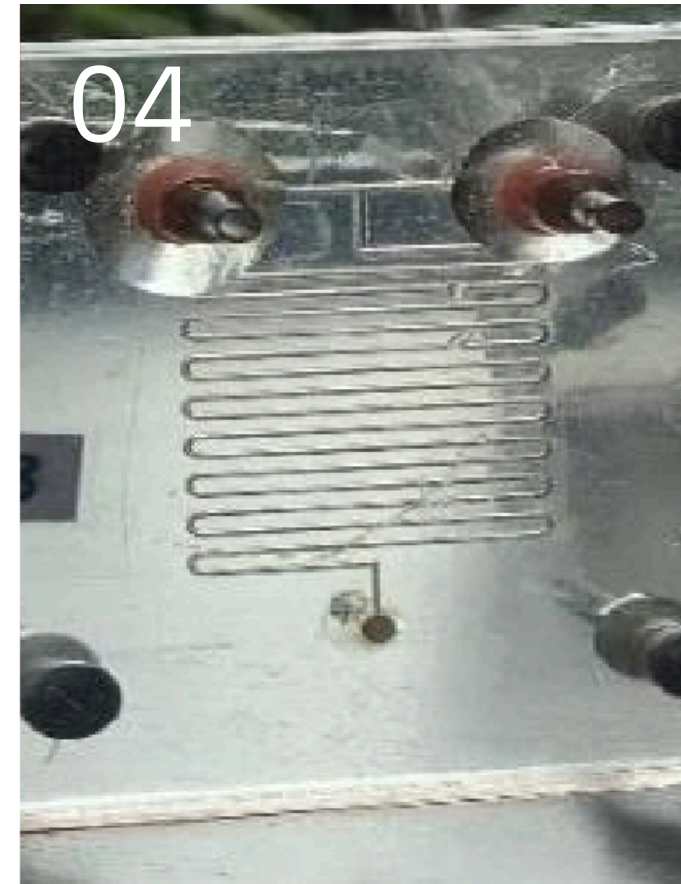
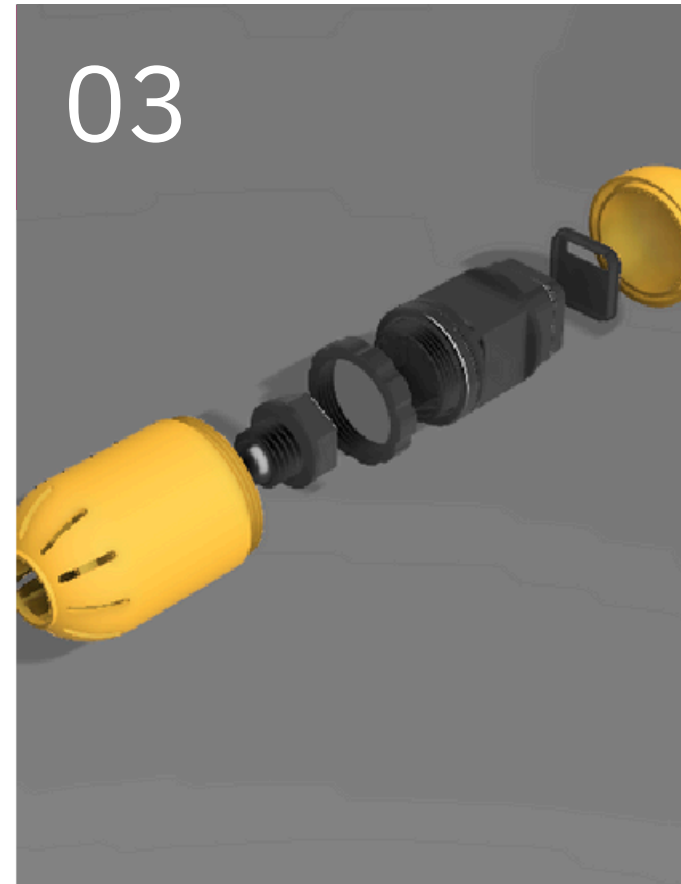
Initiate projects and support individuals or organizations to develop their ideas, build and coordinate teams of subject matter experts, extend a network of global experts, for the purpose of design, research and development of new products.

# Projects examples

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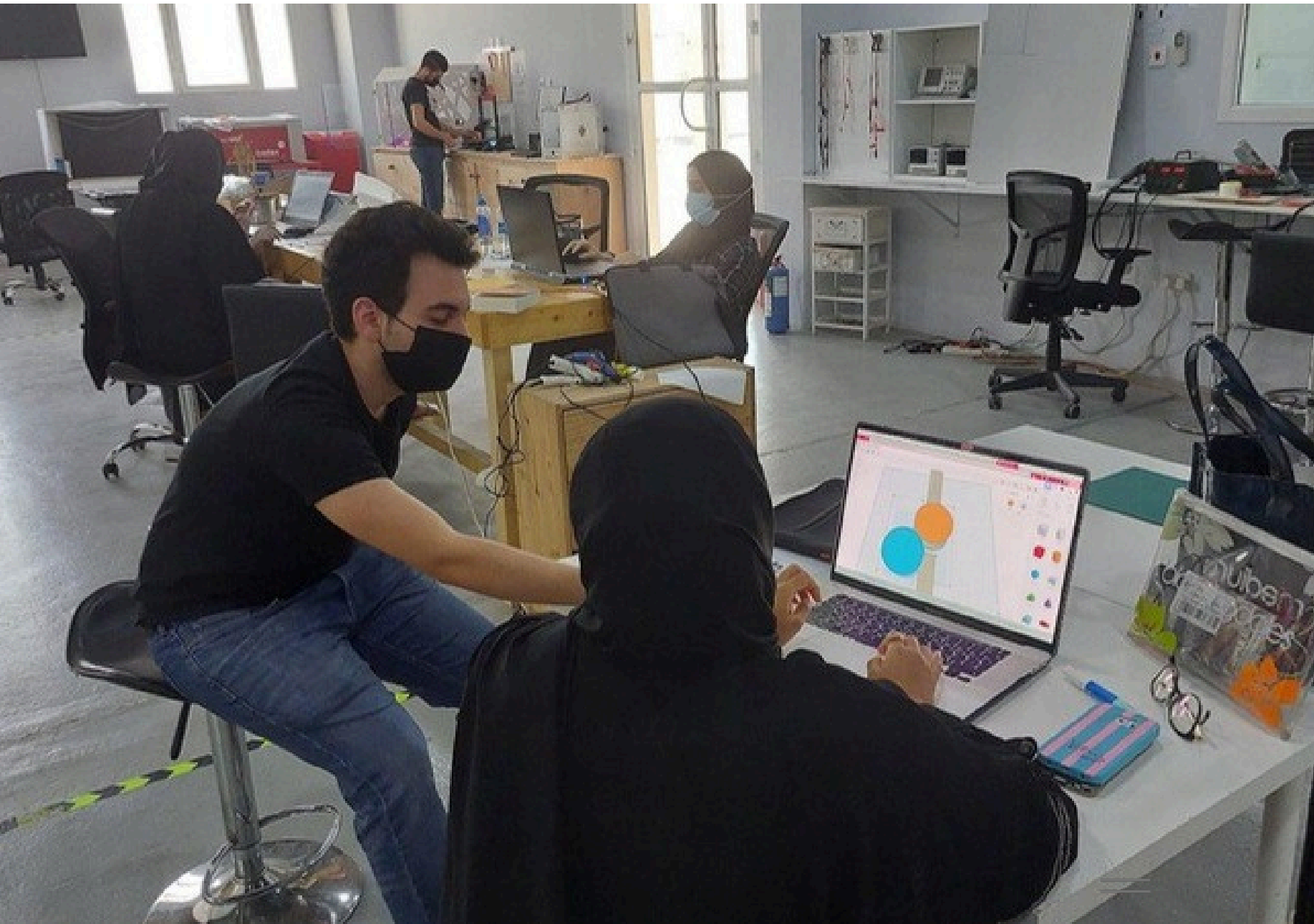
## Sample of our engagement in 2020 / 2021

Our activities in the last two years included





# Fab'n Box



## Ministry of Education / American Embassy

A Train-The-Trainers program for educators in the technical and vocational public schools. The program focuses on digital fabrication principles and how to utilize a Portable digital fabrication lab in STEAM education.

### Our Involvement

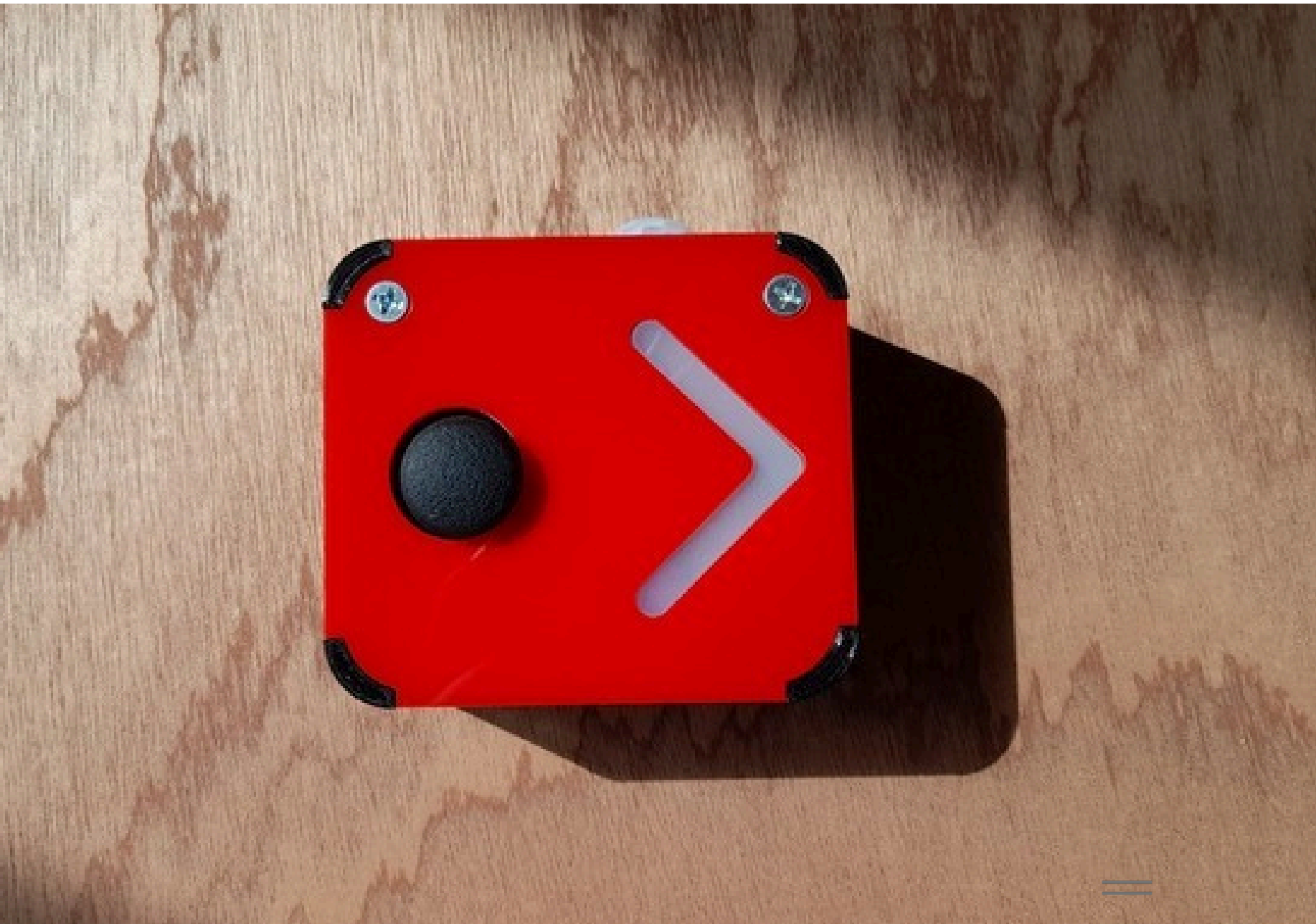
The Designed content and Curriculum included with the toolbox activities covers the basics in digital fabrication technologies in an applied format and towards a project based learning.

### Impact

<b>3</b>	<b>7</b>	<b>&gt;450</b>
<b>MiniLABs</b>	<b>Trainers</b>	<b>Students</b>

Fab'n Box toolbox offers all required to enable ad-hoc popup activities- outside the Fab Lab premises-to support conducting different workshops on various science and technology topics.

# GOIC MOICT IR 4.0



## Gulf Organization for Industrial Consultancy / Ministry of Industry, Commerce and Tourism

Designed and executed 2 workshops (Digital Fabrication Tools and Workflow and Introduction to industrial IoT). The target segment were engineers and technicians working in the industry. The aim of the program is to spread the awareness of IR 4.0 applications in the industry.

### Our Involvement

Designed a program content and an IOT platform hardware / software to test real case scenarios

### Impact

<b>2</b>	<b>30</b>	<b>1</b>
<b>Workshops</b>	<b>Participants</b>	<b>Product</b>

A total of 30 participants took part in 36 hours of hands on training. They came from 10 Different industrial entities and in 5 different sectors.

# Water Purification



## Arabian Gulf Bio-Remedies

Detailed design engineering for a point-of-use water purification device. In a compact and portable form factor for use in small water vessels. Full cycle product development and validation from concept feasibility through a high fidelity prototype and lab testing.

### Our Involvement

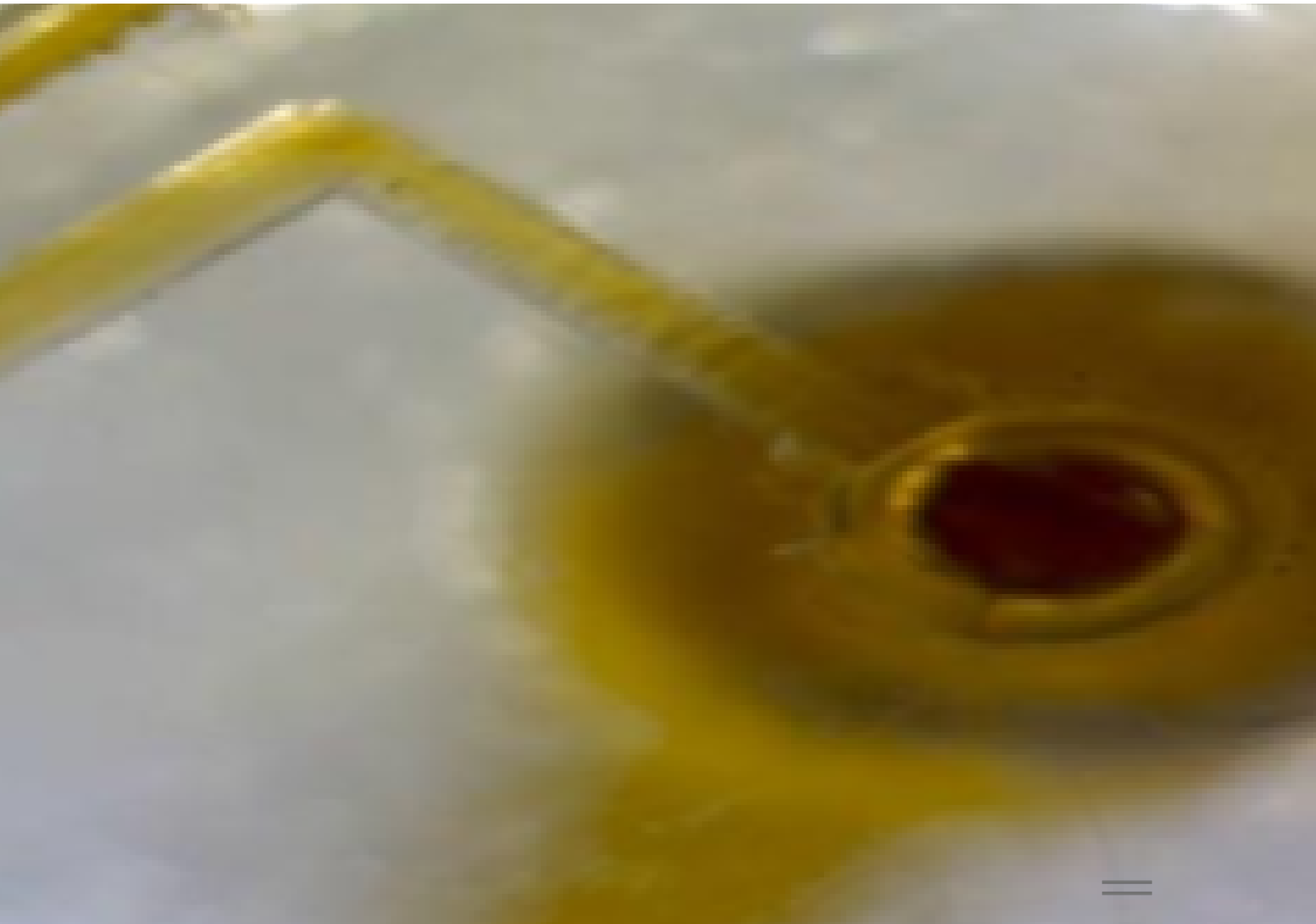
Industrial Design, Prototyping, Electronic circuit Design and Fabrication of Prtotypes for Lab Validation and User Testing.

### Impact

**99.9% Bacterial Reduction**      **4 Functional Prtotypes**

Product testing a bio-lab revolted 99.9% reduction of common water contamination microbes in 15 minutes. Client was able to test product with end users.

# Biodesil Microreactor



## Chemical Engineering Department University of Bahrain

A research project that examines the utilization of microreactors and their contribute to diminish the costs of conventional diesel production methods.

### Our Involvement

Microreactors with different designs and geometries have been designed and successfully fabricated in this study using a high-resolution laser cutting machine. And Fine Milling.

### Impact

<b>5</b>	<b>15</b>	<b>1</b>
<b>Senior Projects</b>	<b>Students</b>	<b>Research Paper</b>

A scientific publications in the Journal of Chemical Engineering and Processing - Process Intensification  
15 different students aquired the skills to design and fabricate microreactors and work independently

# Ethafa STEAM eduTech



## FabLab SUPSI (University of Applied Science and Arts of Southern Switzerland.)

A Swiss startup The Ethafa project was started to rethink how to bridge the gap in tech education and how to engage more Arabic girls in STEAM and technology disciplines. They developed STEAM education based on electronics, playful activities and storytelling.

### Our Involvement

We collaborated with the team to add more local context, user testing and refine their educational dedactics through workshop with primary school educators.

### Impact

<b>1</b>	<b>8</b>	<b>150K Euro</b>
<b>Product</b>	<b>Participants</b>	<b>Funding</b>

The project was awarded a scholarship and a grant by the GRS Foundation to manufacture their kit and they also launched a Kickstarter Campaign.

# Fab Academy \* BH



## A local version of the Fab Foundation Program in Digital Fabrication and Prototyping

FabAcademy, a six-month diploma based of a graduate level course in Digital Fabrication and Prototyping from MIT. Partnering with Tamkeen to offered a shorter moduler version of FAB ACADEMY as one of their professional certificates under the training.

### Our Involvement

This advanced technology diploma was offered to university students and fresh graduates for the second consecutive cycle, to empower them with the necessary tools for digital transformation.

### Impact

<b>&gt;80</b>	<b>6</b>	<b>&gt;175</b>
<b>Project</b>	<b>Qualified</b>	<b>Over 3</b>
<b>Prototypes</b>	<b>Instructors</b>	<b>Years</b>

Fab Academy grow over the past 5 years to impact university students, graduates and job seekers. Many of them had succusful employment opportunities and all were able to realize an idea of a product with a tangible prototype.

# SPARK



## SPARK

A community empowerment initiative focused on digital and e-skills training leveraged the expertise of Fab Lab alumni and volunteers, designated as Fab Lab Ambassadors. These ambassadors led workshops in their local areas after receiving training on educational resources, electronics kits, and programming. All program resources, including trainer guidance and educational materials, were accessible via an online platform equipped with an integrated development environment. The curriculum, building on the existing Fab Lab Bahrain content, emphasized projects aligned with addressing the challenges outlined in the Sustainable Development Goals (SDGs).

### Our Involvement

FabLab provided training on educational resources, electronics kits, and programming. We also custom designed all program resources, including trainer guidance and made everything available in an online platform.

### Impact

<b>&gt;35</b>	<b>20</b>	<b>&gt;400</b>
<b>Designed Lessons</b>	<b>Qualified Instructors</b>	<b>Students in 2023-24</b>

Over 20 trainers and volunteers were trained through the program, benefiting more than 400 students aged 8-14 across diverse regions in Bahrain. This initiative was supported by the US Embassy.

# TechStride



## TechStride

TechStride is a cutting-edge program designed to empower Bahraini youth with vital competencies in leading-edge technologies like industrial robotics, artificial intelligence (AI), machine learning (ML), and game design. Tailored for high school students and fresh university entrants, TechStride offers a hands-on, project-centered educational journey that nurtures creativity, critical thinking, and innovation. Beyond theoretical knowledge, participants engage in practical applications, honing their skills through real-world projects. This initiative not only imparts knowledge on modern technologies but also guides students in exploring career avenues that resonate with their passions and aptitudes.

### Our Involvement

By combining theoretical learning with hands-on experience, the program not only imparts valuable skills but also sparks creativity, resulting in innovative solutions. TechStride has been instrumental in guiding academic and career choices, impacting majors and specializations.

### Impact

<b>&gt;20</b>	<b>7</b>	<b>&gt;60</b>
<b>Project Prototypes</b>	<b>Qualified Instructors</b>	<b>Students in 2024</b>

In a single month, TechStride has significantly influenced participants, reshaping their approach to idea generation and project development. This initiative fosters skill development and shifts mindsets towards innovation and problem-solving, motivating participants to pursue their passions for a successful future.



# Projects in The Pipeline



## Robotic Lab

Creating equipped space to conduct training and research activities in the fields of Industrial Robotics operation and control. The facility will run regular programs for students or junior engineers in the industry to help raise awareness and build the necessary skill sets to transition into innovation economy.

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## Mobile Fab Lab

The idea is to run a mobile facility that would serve as a rough prototype for the centre, initially with scheduled route and targeted industries to source ideas for topics to investigate of high relevance to the community and with business development at a later stage. ating the potential those technologies hold.

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## ProductCon

'Jolt' is a one year program of workshops, special talks, forums leading to a final conference on the first week of February every year. Jolt mission is to raise the regional game in product design, product development and desktop manufacturing.

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## IOT sandbox

the reluctances in testing many of the suggested technologies in real environments. And hence we are working on designing a test environment with both the hardware and software components to raise the awareness of and facilitate the adoption of industrial IOT technologies.

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# Why Fab Lab

## Experience

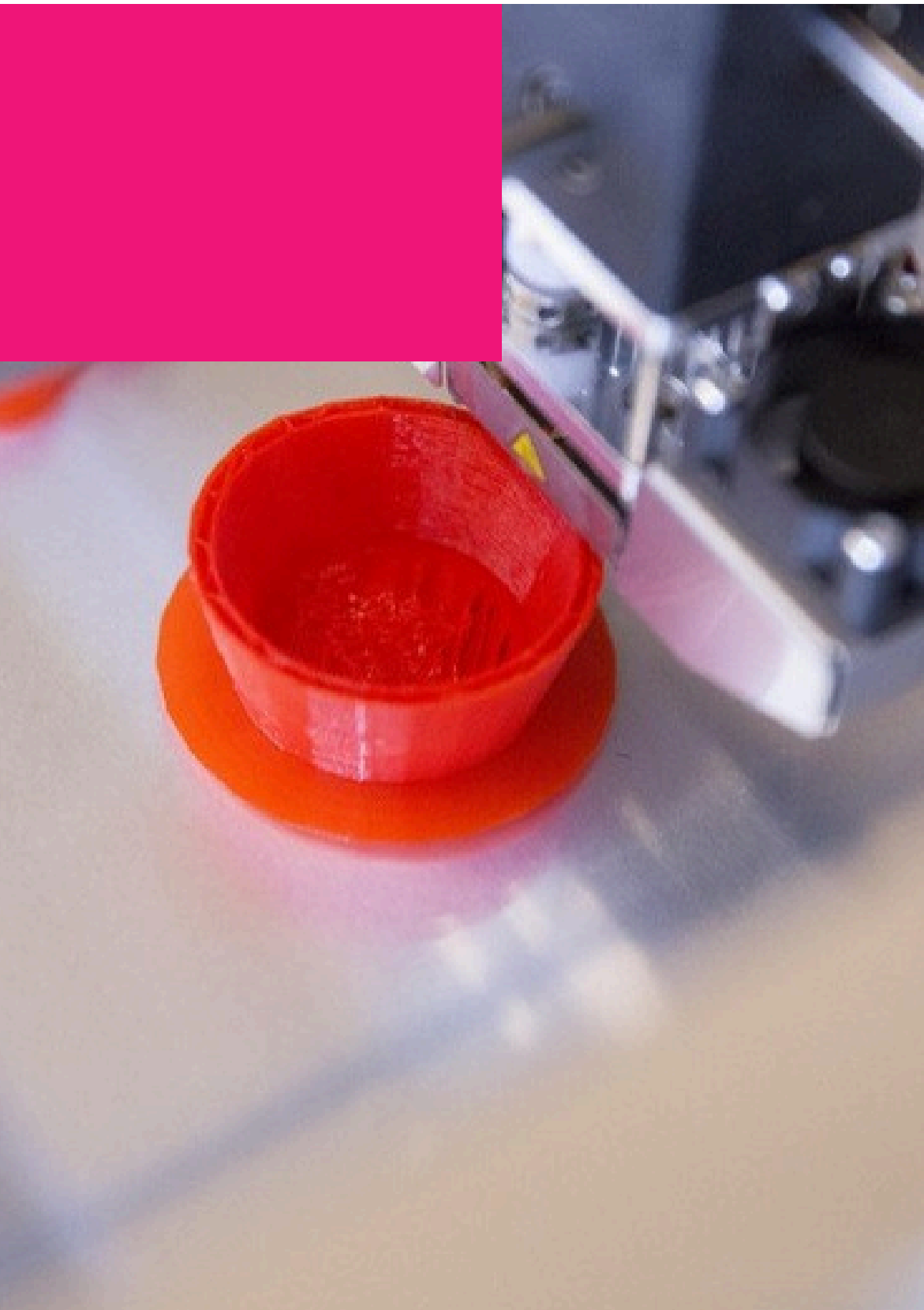
Fablab Bahrain has been working on areas related to Industrial Innovation, Upskilling, R&D and Product development for the past 7 years.

## Outlook

Our programs are inline with the economic recovery plan and national economic strategies which positions us for a rapid growth.

## Value proposition

Fablab Bahrain fills an important gap (Lack of Product Design and Development entities and R&D in the areas of science, technology and manufacturing)



# Thank You

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