ROBOGROUP T.E.K LTD – Update Report

12.12.2021

Stock Exchange
TASE

Symbol
ROBO

Sector
TECHNOLOGY

Sub-sector
ROBOTICS & 3D

Stock price target
NIS 4.8

Closing price
NIS 1.9

Market cap
NIS 88.6 Mn

No. of shares
45.4 Mn

Average Daily Trading Volume
305 stocks

Stock Performance (since Jan. 2021)
-70.6%

RoboGroup is stepping up its efforts to gain a foothold in the US market; won a tender with the South American government; we update the price target NIS 4.8.

RoboGroup (TASE: ROBO) develops, manufactures, and markets training products and e-learning systems, as well as engineering and manufacturing technology training systems. It offers its products internationally under the Intelitek, Robotec, and CoderZ brands.

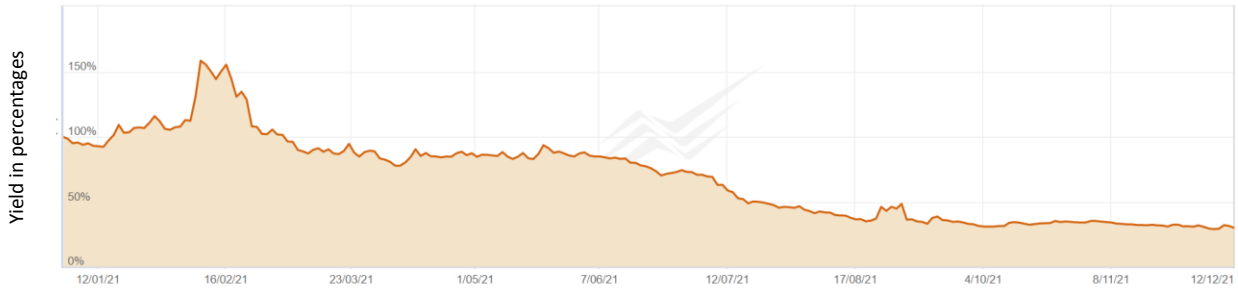
In Q3/2021 and recent months, the company announced the following:

- Increased efforts to penetrate the American market by establishing a sales, marketing, and customer success teams.
- Established a business development & sales unit to address the industry 4.0 needs.
- CoderZ has been approved in a tender for suppliers of the Israeli Ministry of Education for the supply and operation of digital learning materials in computer science for fourth to ninth grades.
- Started working with Iowa and Massachusetts state governments to be incorporated into their schools' curriculum.
- Won the tender for the supply and establishment of its equipment for Industry 4.0 training for the South American government.
- Examining the possibility of raising capital from the public, and examining the possibility of raising long-term debt.

The EdTech industry is expanding exponentially, with demand rising due to COVID-19 and associated significant changes in the realms of work and labor. EdTech expenditures follow a growth trend, increasing from $152 billion in 2018 to an expected $404 billion by 2025[1].

The company did not meet its revenue projections in H1 2021 due to **delayed B2C activity**, the **geopolitical situation in Ghana**, and **delays in the Negev and Galilee projects**. However, the company is making concerted efforts to **expand its operations in the U.S., North America, and Africa**.

On the next page, we present the main events in the passing months and Q3 2021.



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[1] "Global EdTech Market to Reach $404B by 2025 -16.3% CAGR," HolonIQ, August 6, 2020

Key events in the passing months and Q3 2021:

- On May 23, the company signed a MoU in Ghana for the expansion of another $24 million - $10 million for STEM and $14 million for Industry 4.0 - as the third expansion of the Ghana expansion.
    - Due to lockdowns in Ghana and geopolitical issues, the project was postponed to the beginning of 2022. This is a 2 year project.
- On August 16, Intelitek received a notice from the Iowa State Department of Education in the U.S that the CoderZ platform was approved as a curriculum and training for computer science teachers for the whole state – elementary, middle, and high school.
- On August 19, the Massachusetts state government announced on its STEM platform that Intelitek was selected to receive a grant to present the STEM challenge on the CoderZ platform during STEM Week 2021. The grant of tens of thousands of dollars will fund the presentation of the challenge and training teachers in using the CoderZ platform.
- On November 10, the company announced that it won the tender for the supply and instillation of its equipment in the labs of the Government Institute for Technological Studies in South America.
    - The scope of the project is approx. USD 1 million
    - The products that are part of the project include equipment, simulation software, and training products for Industry 4.0.
    - The delivery is expected to take place by the end of H1 2022.
- The company won a tender for suppliers in Israel accompanied by an order for NIS 50 thousand without the requirement to provide any marketing activity
- The company signed an agreement with the Israel Chamber of Engineers to conduct Industry 4.0 training for engineers in various factories in the country, using the new content system for Industry 4.0 developed by the company as part of the joint program of the company and the Innovation Authority.

We note that the ARK Israel Innovative Technology ETF ceased to be an interested party in the stock (presumably due to liquidity problems). Also, EdTech related regulation in China affected many EdTech companies' stock prices. At this point, the RoboGroup has only small activity in Hong Kong,

Investment Thesis

RoboGroup T.E.K. Ltd. (TASE: ROBO) is an Israeli company that is publicly traded on the Tel Aviv Stock Exchange. RoboGroup's vision is to disrupt the STEM (science, technology, engineering, and math) education technology market with its proprietary online virtual platform that enables students to learn coding, mathematics, and physics using virtual robots. The robots operate according to real-world physics and are controlled using unique coding techniques designed for young students.

The platform represents an accessible alternative for teachers and students lacking access to physical robots due to high costs, major logistical barriers blocking scalability, and high teacher proficiency requirements regarding robotics and coding. The platform also offers flexibility for simulating advanced technology (such as AI) and advanced environments (such as space) for students who are already engaged in STEM work. Its second business unit offers Industry 4.0 training with a range of physical and remote-learning products and services.

Global Education Technology Market

Size

- Education technology expenditures are following a growth trend, increasing from $152 billion in 2018 to an expected $404 billion by 2025.
- The COVID-19 pandemic has fueled a spike in growth in global e-learning for schools (K-12) that is expected to generate over $240 billion by 2022 and $300 billion by 2026 from various sources.
- The first investments in EdTech were made a decade ago with $500 million in VC investments, expanding exponentially with an 32-fold increase of $16 billion in 2020.
- The physical robotics market in education is currently valued at $1.3 billion globally, and is positioned to grow to $3.1 billion by 2025[1].

Current Challenges

- There is a shortage of STEM teachers.
- High costs (often reaching hundreds of USD per student for hardware, travel, etc.) create a "glass ceiling" that prevents minority populations and lower socioeconomic groups from participating in competitions, thereby reducing their chances of participating in the growing STEM economy.

[1] https://www.marketsandmarkets.com/Market-Reports/educational-robot-market-28174634.html?gclid=CjwKCAiAjeSABhAPEiwAqfxURcbM-5wdSNra26Q1yu_neulojx0GUmZumIZRI_hNGMNz3MNku0P44BoCnG4QAvD_BwE

- Learning progress is hard to measure, as it's not individual learning/robots.
- Teaching methods that inspire children's curiosity are lacking, and there is a need to shift the emphasis away from simply learning facts to enabling students to carrying out innovative and enjoyable projects using the knowledge gained, including being creative by applying their own ideas.

RoboGroup's Opportunities

- The COVID-19 pandemic has had a marked positive impact on market growth.
- STEM studies using robotics and science represent a significant pillar that is shaping the future of the economy, in addition to the well-being, security, and progress of all societies and states.
- Mid- and long-term growth is expected in the STEM education segments as governments increasingly move to support the STEM curriculum by, for example, mandating programming training in the K-12 curriculum.
- Schools around the world are facing growing demands by parents and other stakeholders to prepare students for rapid economic, environmental, and social changes, and for jobs that have not yet been created.
- CoderZ can become a leading and enabling platform for expanding STEM and robotics education through its development of individual, integrative, and fully digital learning solutions. In this way, it can penetrate new market segments.

RoboGroup's Value Offering

- **Two company divisions:** (1) STEM Professions Training and Education; and (2) Professional Training in the Industry 4.0 Domain, including Automation, Robotics, and Smart Factories.
- **Unique technology and innovative processes:** (1) highly advanced simulation of physical robots accessible from a browser; (2) modular simulative world to support wide-scale; and (3) efficient content creation mechanism that saves significant development resources, (4) multiplayer options.
- **Business model**: STEM education—user/class/school licensing. Industry—turn-key projects, equipment, and software sales.
- **Vision**: "Inspire every learner on the planet to realize their full potential and own their future." Increase the accessibility of STEM education and robotics so that every student will have more career options in their future. Become the preferred choice for STEM and robotics education, through a gamified, competitive, and self-based learning methodology.

- **Market penetration**: Enter schools' STEM curricula through standards-aligned and integrated curricular activities and extra-curricular competitions and activities.
- **Channels**: Multiple channels to market, including distributors, partnerships with software companies (such as Amazon), robot manufacturers (such as Lego), industrial robot manufacturers (such as Yaskawa), and many others. Scaling will focus on volume/value partner development, together with strong B2C activities, when the company is ready to launch.
- **Company roadmap**: Moving toward an integrative, virtual, and fully digital platform.

The education technologies industry is expanding exponentially, with demand rising due to COVID-19 and significant changes in the world of work and labor. This so-called third education revolution involves a personalized, digitized, and decentralized education system.

In addition to expanding its traditional core activity, part of RoboGroup's strategy is investing heavily in developing new products to address the growing education technology (EdTech) market needs. RoboGroup's strategy is to become a leading integrated STEM and industry virtual education learning platform by eliminating the key barriers and challenges that exist today. The company's goal is to become the preferred choice for STEM and robotics education using a gamified, competitive and self-based learning methodology.

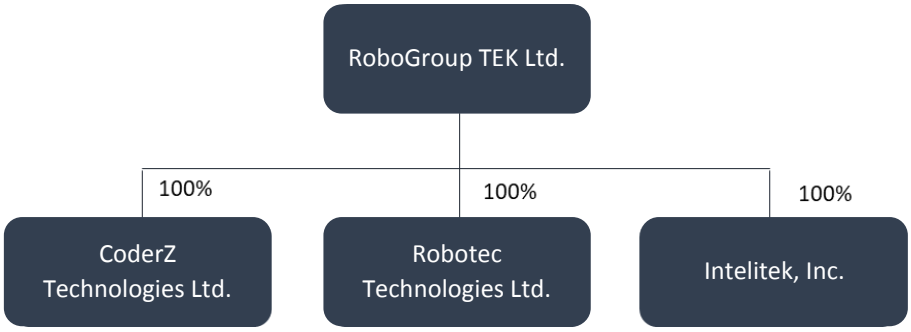
Due to RoboGroup's unique value proposition and its strategic collaborations with leading channels to market, we believe that the company will play a vital role in the growing education technologies market. We see RoboGroup as an outstanding investment opportunity. However, like any technology firm, RoboGroup needs to achieve its vision of becoming a fully digitized and automized solution and to execute further significant sales.

Company Overview

RoboGroup T.E.K. Ltd., headquartered in Israel, is engaged in developing, manufacturing and marketing technology training and education products. It offers its products under two business units – industrial training and STEM education.

Company was incorporated in 1982 as a private company (current name is used since 2000). Company's shares are listed for trading on the Tel Aviv Stock Exchange since 1991 (TASE: ROBO).

The RoboGroup consists of three subsidiaries:



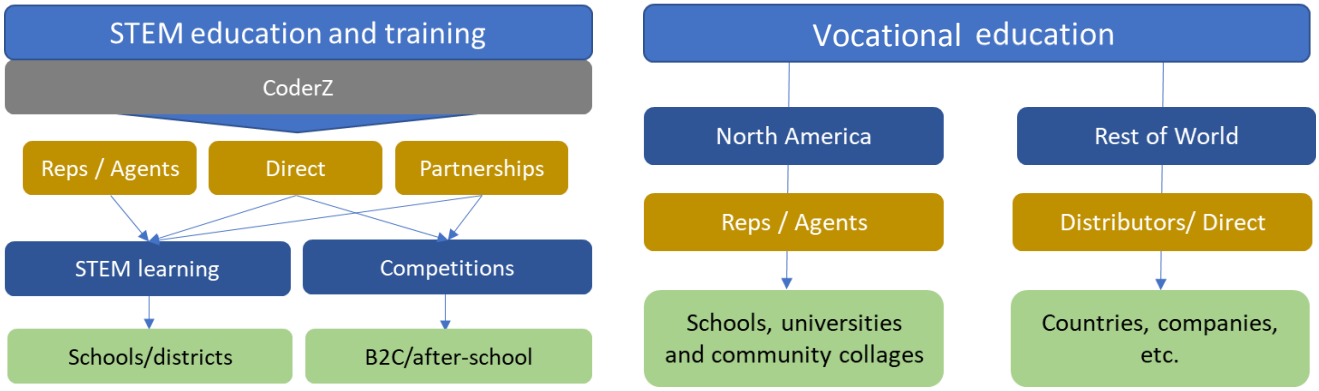
CoderZ Technologies Ltd. - a private company incorporated in Israel and engaged mainly in the development, marketing and distribution of an experiential and gamification-based STEM learning platforms via the use of virtual robots.

Intelitek - a private company incorporated in Delaware, USA and engaged mainly in marketing, sales, technical support and maintenance of the Group's products and products of third parties to the North American education market.

Robotec Technologies Ltd. - a private company incorporated in Israel and engaged in planning and implementation of technology laboratories in the education system, marketing, distribution, installation and maintenance of all the Group's products, third party products and related products in the STEM field, to the training and education markets. Robotec characterizes and develops advanced solutions, and maintains an extensive set of tutorials and advanced training courses.

Business Model

RoboGroup has two main divisions: STEM education (user/class/school licensing) and Vocational education (turn-key projects, equipment, and software sales).



2. Market Overview & Analysis

The Transformation of Education Industry

The world of work is undergoing a massive shift and as a direct impact we are also at the heart of a global revolution in education.

According to McKinsey Global Institute's report[1], 30-50% of American workers may have to change jobs by 2030 because of artificial intelligence and automation and the past promise of governments and universities that higher education equals secured jobs and income no longer apply.

The current changes in education and training are likely to be marked by continual training throughout a person's lifetime—to keep current in a career, to learn how to complement rising levels of automation, and to gain skills for new work. Workers will likely consume this lifelong learning in short spurts when they need it, rather than in lengthy blocks of time as they do now when it often takes months or years to complete certificates and degrees.

Education was already going through a significant change and a slow evolution going back 10 years or so when Covid-19 hit and turned it into a revolution. Key aspects of what is known as the 3rd education revolution[2] are:

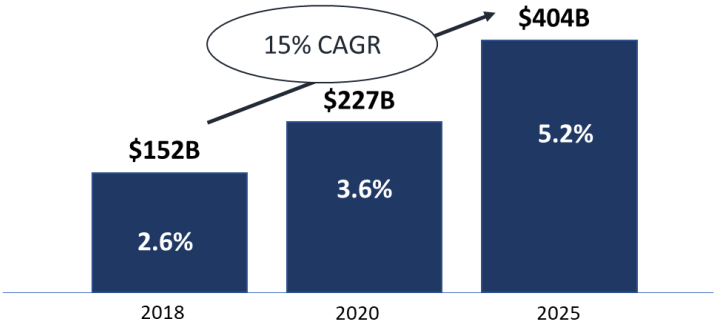
- New alternatives to a central education system
- De-centralization of budget allocation and responsibilities

- Personalized student development programs
- The decline of formalism and the rise of personal digitization
- The labor market and the education market are one

According to Wittgenstein Centre for Demography and Global Human Capital, there will be **half a billion more school and university graduates** in the world by 2025 than today, driven primarily by population growth in developing countries.[3]

Education technology expenditures are in a growth trend **from $152 billion in 2018 to $404 billion by 2025.** However, there is still a lot of growth available as it is still **5% of overall expenditure**.

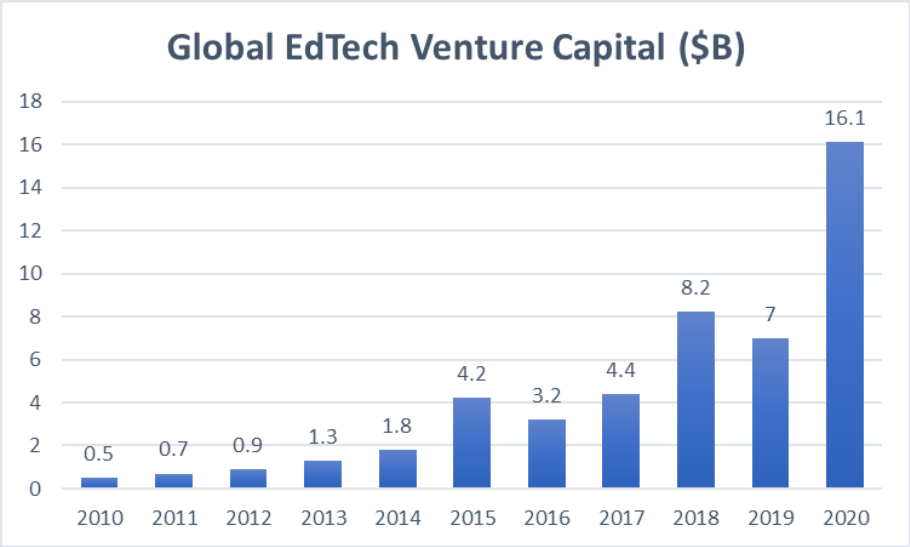
Growth in Total Global Expenditure on Education Technology in USD



Source: HolonIQ

The Covid-19 pandemic is fueling a spike growth in global e-learning for schools (known as K-12) which is expected to generate over **$240 billion by 2022** and $300 by 2026 by various sources[4]. About 60% of market revenues are generated from software.

Investments in Education Technology (EdTech) startups started a decade ago with $500 million of **Venture Capital investments** exploding to 32x higher at $16B in 2020.



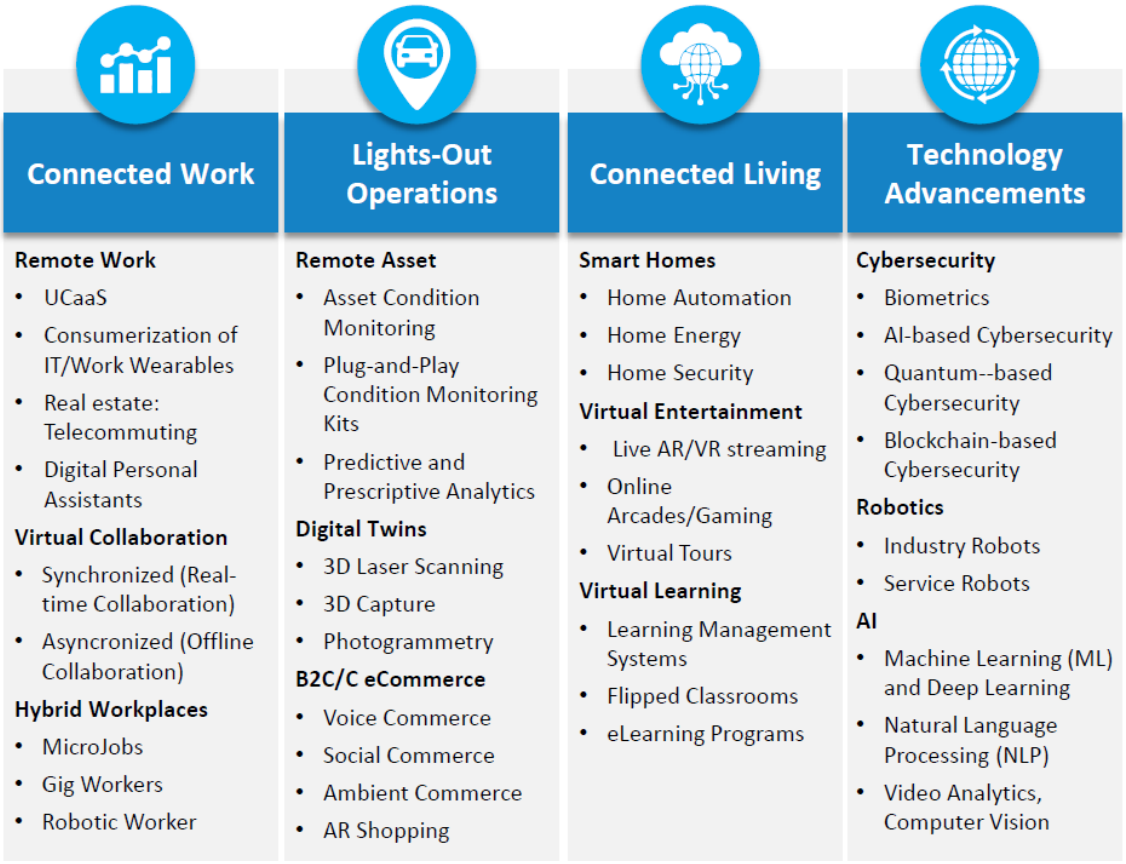
Source: HolonIQ

Long Tern Impact of Covid-19

Global lockdowns and schools roll out of remote learning since March/April opened up massive opportunities for EdTech companies as schools, teachers and parents look for effective remote learning solutions.

A recent report by & Co. Global Strategic Studies Institute from October 2020 stated that "...as the introduction of EdTech progresses, learning will likely be transformed significantly from being centered on group education in one-way lecture format to personalized learning. …this could be described as a "*paradigm shift in learning*": the mainstream of learning is moving from group education to personalized learning optimized to each individual, and a modular, lifelong form of learning is emerging in vocational education."[5]

Many other related opportunities that arise following the COVID-19 outbreak contribute to the growth potential of the market – Demand for robotics, virtual learining and the future of remote work.


Connected Work
Remote Work
• UCaaS
• Consumerization of IT/Work Wearables
• Real estate: Telecommuting
• Digital Personal Assistants
Virtual Collaboration
• Synchronized (Real-time Collaboration)
• Asyncronized (Offline Collaboration)
Hybrid Workplaces
• MicroJobs
• Gig Workers
• Robotic Worker
Lights-Out Operations
Remote Asset
• Asset Condition Monitoring
• Plug-and-Play Condition Monitoring Kits
• Predictive and Prescriptive Analytics
Digital Twins
• 3D Laser Scanning
• 3D Capture
• Photogrammetry
B2C/C eCommerce
• Voice Commerce
• Social Commerce
• Ambient Commerce
• AR Shopping
Connected Living
Smart Homes
• Home Automation
• Home Energy
• Home Security
Virtual Entertainment
• Live AR/VR streaming
• Online Arcades/Gaming
• Virtual Tours
Virtual Learning
• Learning Management Systems
• Flipped Classrooms
• eLearning Programs
Technology Advancements
Cybersecurity
• Biometrics
• AI-based Cybersecurity
• Quantum--based Cybersecurity
• Blockchain-based Cybersecurity
Robotics
• Industry Robots
• Service Robots
AI
• Machine Learning (ML) and Deep Learning
• Natural Language Processing (NLP)
• Video Analytics, Computer Vision

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Endnotes

[1]https://www.mckinsey.com/~/media/mckinsey/industries/public%20and%20social%20sector/our%20insights/what%20the%20future%20of%20work%20will%20mean%20for%20jobs%20skills%20and%20wages/mgi%20jobs%20lost-jobs%20gained_report_december%202017.pdf

[2] https://www.nesacenter.org/uploaded/conferences/FLC/2018/handouts/DonnaOrem_ThirdEdRevolution2018.pdf

[3] http://dataexplorer.wittgensteincentre.org/wcde-v2/

[4] https://e-student.org/e-learning-statistics/

[5] https://www.mitsui.com/mgssi/en/report/detail/__icsFiles/afieldfile/2020/12/17/2010x_sakai_e.pdf