

MASTERING THE PATH FROM R&D TO **MEGA- PROJECTS**

**Academic Director:
Professor Jacob Nagel**



**Policy, Strategy, Resource Allocation,
HR, Organizational Dilemmas
and Managing the Uncertainty**



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Welcome to the MMP Workshop

A 3-day workshop (a full day per week for 3 weeks) for senior executives on the path and transition from research & development to the realization of mega projects: strategy, policy, resource allocation, HR, organizational dilemmas and managing the world of uncertainty.



Schedule

2/11/2021

9/11/2021

16/11/2021

9:00am - 5:00pm
Technion Sarona
Campus, Tel Aviv

Each day will be comprised
of 4 sessions and a lunch
break.

The workshop includes
refreshments and lunch.



Target Audience

Executives at the middle and
senior level, with about 10
years of experience in the
private or public sector.

Participants can hail from a
variety of industries and
roles, including:
CEO, COO, CFO, Directors,
Board members, Attorneys,
Diplomats, Team leads and
Project leaders.



Goal

The expansion of theoretical
and practical knowledge on
strategy and policy for the
management of R&D in
knowledge-intensive industries.
Presentation of methods and
considerations for goal driven
and intelligent allocation of
resources, building unique R&D
and Mega-projects human
resources, organizational
considerations, management
under conditions of uncertainty,
and the transition from R&D to
mega-project management in
the civilian and defense realms.



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In the coming decade, a huge increase in the number of mega-projects worldwide is expected. The causes of this phenomenon include, among other things, an increase in the power of cities and "mega-cities," rapid technological developments, an information "explosion", lack of resources, security needs and more.

The goal of the MMP - Mastering the Path from R&D to Mega-Projects workshop is to give senior managers theoretical and practical knowledge in strategy and policy for R&D management in knowledge-intensive industries, present methods and considerations for resource allocation, building the unique human resources required for these needs, pointing out the organizational considerations and how to survive management under conditions of uncertainty, including the transition from R&D to mega-project management in the civilian and defense realms.

The three-day workshop will include lectures on core topics, guest lectures on mega-projects by senior executives from the industry, and a discussion of the topics covered in the workshop.

The classic development pyramid includes basic science and technologies, feasibility studies and prototypes, and full development.

The academy has an important and central role in building the pyramid base, while full-scale development (FSD) is generally performed in the industry.

The connection between academia and commercial R&D entities in Israel is fundamentally different from what is generally found around the world, especially in light of its relatively small size, the almost familial closeness, and the collective service in the Israel Defense Forces. These factors allow for the deeper understanding of needs, an immediate link between technological breakthroughs, market demands and educational daring, for which there is no precedent in the world. Many countries, such as the United States, Singapore, Germany, Scandinavia, the Gulf states and more, are looking for collaborations with Israel to learn up-close how things are done.

Workshop Objectives



Connection to Industry needs



Theoretical and practical knowledge



Leading instructors



Technion excellency

Technion Continuing Education Division

Technion - Israel Institute of Technology is the oldest academic institution in Israel. The Technion has set for itself the goal of promoting and developing knowledge through teaching and research in pure science and engineering, technology, medicine, management and more.

The Division of Continuing Education is specializing in developing and organizing certificate programs for graduates of institutions of higher education, for engineers and for senior professionals in various branches of the industry.



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04-8295050



Sarona Campus, Tel Aviv





November 2, 2021

Module 1: Introduction – Professor Jacob Nagel

- Opening
- Key components in R&D management methodologies and mega-project development
- The role of technology in the development of mega-systems, examples from complex systems, mostly from the defense world

Module 2: System engineering of super systems (SOS) – Yair Ramati

- Complex mega-projects comprised from system of systems
- Correct characterization of the "system" and the balance between possibilities and risks
- Dismantling the overall requirements to subsystems
- Control of the design of the whole to optimum standards and efficiency, down to the component level
- Ability to develop, test, and produce any subsystem and component
- Execution of Testing for the entire system and the possibility of future extensions, interfaceces and combinations

Module 3: Practical management of mega-projects – Brigadier General (res.) Pini Youngman

- Managing multi-system development starting from an idea to a technological solution, versus an identified need
- Preparation of a complex solution, detailed definition of requirements, choice of architecture, and definition of systemic processes
- The technological gap, which requires continuous investment in the research and development of new and complementary technologies, their integration with existing technologies, risk reduction and work point selection
- Organizational process for building the managerial structure of a mega-project, selecting the right people for management and development, connecting as needed to other complementary industries
- The process and challenge of building detailed work plans, for the benefit of continuous management and control

Module 4: Defense R&D – Professor Jacob Nagel

- The uniqueness of defense R&D
- NSS – National Security Strategy - The perception of defense and security in the State of Israel, its development in the last century and its influence on building Israel strength and force
- Key R&D directions, examples and emphasis on the WBW (War Between Wars) and Cyber





✓ **November 9, 2021**

Module 5: How to think differently? – Dr. Eyal Hulata

- Entrepreneurship, innovation and thinking out-of-the-box in R&D management and mega-projects.

Module 6: Allocation of resources – Professor Jacob Nagel

- The processes and algorithms for resource allocation based on the needs of R&D management and project development.

Module 7: Innovation in Large organizations – Rakefet Russak-Aminoach

- The importance of innovation in large organizations and how to generate and establish innovation processes.

Module 8: R&D strategies – Professor Jacob Nagel

- Key principles in building an organizational R&D strategy

✓ **November 16, 2021**

Module 9: From initiative to mega-project – Israel Grimberg

- Transition from initiative, in Disruptive Technology fields, to mega-projects, in civilian and military realms.

Module 10: The critical role of data science in the development of mega-projects – Professor Oren Kurland

- Opportunities and risks in data-based mega-projects
- The transition from research to development and back to research
- The similarity and difference of data-based projects compared with the world of classic software development and the impact on organizational structure, unique personnel training, and ethical issues.





Module 11: Organizational aspects, human resource, and management under the conditions of uncertainty – Professor Jacob Nagel

- Organizational dilemmas and human resource development
- R&D and mega-projects management under the conditions of uncertainty
- Familiarity with families of special technologies, changing realities:
 - Supporting technologies
 - Emerging technologies
 - Converging technologies
 - Disruptive technologies

Module 12: Summary – Professor Jacob Nagel

- Open discussion of seminar topics and summary

*Order of the lectures subject to change



Professional Credential

At the completion of the workshop, participants will receive a certificate of Completion of MMP workshop from The Technion Continuing Education Division





Meet our lecturers:



Academic director: Brigadier General (Res.) Professor Jacob Nagel

Visiting Professor at the Technion in the Faculty of Aerospace Engineering, Head of the Center for Security Science and Technology (CSST), with 40 years of experience in government and intelligence (IDF, MOD and the Prime Minister's Office) in a variety of roles.

In the years 2016-2017, he was the National Security Adviser to Prime Minister Benjamin Netanyahu and the acting head of the National Security Council. Nagel was the scientific deputy of the Directorate for Defense Research and Development and acting head of Military R&D in the Ministry of Defense and performed a wide range of technological and commanding positions in Unit 8200.

Among his duties he headed the "Nagel Committee," which recommended the development of the Iron Dome system in 2007, signed on behalf of The State of Israel on the \$38 billion MOU agreement with the United States in 2016, and headed the team of Israeli experts working with world powers during the discussions on the Iranian nuclear agreement.



Dr. Eyal Hulata

CPO at PAGAYA Fintech company and an entrepreneur in the field of global warming reduction technologies. He previously served as Technology Unit Chief in the public service.

He was just nominated the next NSA to PM Bennet.



Professor Oren Kurland

One of the best-known, leading data researchers in the world.

His main area of research is information retrieval. Professor Kurland serves as editor and a senior member of leading international journals and conferences in the fields of artificial intelligence and information retrieval. He was one of the founders of a bachelor's degree in Data and Information Engineering at the Technion and one of the initiators and leaders of the IDF "Alonim" program (academic reserve studies for a bachelor's and master's degrees in data science).





Meet our lecturers:



Rakefet Russak-Aminoach

Managing Partner of Team8 Fintech.

Rakefet is a visionary in the global digital banking arena, listed on Fortune Magazine's "100 Most Powerful Women" three times since 2015. In 2016, she was named as one of the "10 Most Innovative CEOs in Banking" by Bank Innovation for the second year in a row and was also listed among the BBC's "100 Most Inspirational and Influential Women" of the year. Rakefet served as President & CEO of Leumi Group between 2012-2019. Under her leadership, Leumi established itself as Israel's leading bank in profits, market cap and innovation. Rakefet led this turnaround via digital transformation, enhanced efficiency, and a culture change. She established Leumi-Tech, the Group's Hi-Tech arm, and launched PEPPER – Israel's first and only neo-bank.



Brigadier General (Res.) Pini Youngman

Senior Vice President and Head of Air Defense Systems Division at Rafael since 2017. In the past, he served as director of Rafael's missile defense systems and was involved in the design, development, production, and execution of "Iron Dome" and "David's Sling". Prior to joining Rafael, he served for 28 years in the Air Force in various command and staff positions.



Israel Grimberg

Co-founder of Team8. The company was established with the aim of building start-up companies with an innovative and groundbreaking method and approach called 'It takes a village to raise a company' in the fields of cyber, fintech and other realms like health, digital and energy.

In his previous position, he commanded the Cyber Center in Unit 8200 and was one of the generators of the Cyber Revolution in the unit and in the IDF in the early 1990s, including the management of mega-projects in the cyber field, with significant national impact. Today, in addition to his business activities, Israel pursues doctoral studies in philosophy at Tel Aviv University and, together with intelligence alumni and other business people, founded a philanthropic organization in the field of education.



Yair Ramati

Served as director of the Combined Combat Systems plant in Israel Aerospace Industries and as IAI's Marketing Corporate Vice President. Ramati led for 4 years the effort to develop missile defense in Israel as head of the IMDA, the Israeli government agency charged with the development, production, and the delivery of missile defense systems in the MOD/DDR&D. In 2016 he moved to the business, civilian and military market. He has written several patents and won many Israeli and international awards, including the Israel National Security Award.



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ABOUT THE VENUE

Azrieli Sarona Tower

Azrieli Sarona Tower is the tallest skyscraper in Israel, located in the heart of Tel Aviv, adjacent to the Technion Sarona campus.

The workshop will be held in Technion's new auditorium, located on the 29th floor of the tower, facing the city's unique landscape and amazing urban views.

With its advanced technological systems, the auditorium regularly hosts executive workshops and conferences for senior professionals at the highest level.

Address: 121 Menachem Begin Road, 29th floor, Tel Aviv-Yafo.

For those arriving by train, get off at the Tel Aviv HaShalom station.



* If necessary, there may be a change in the location of the seminar for a spacious classroom in The Technion campus in Sarona, Tel Aviv



Costs of the workshop include all course materials, lunch and refreshments



Second and subsequent enrollments from the same organization receive a 1,000 NIS discount



Advance registration: 8,000 NIS plus VAT
(480 NIS registration fee)

Regular price: 9,200 NIS plus VAT
(480 NIS registration fee)

To apply for the workshop
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