ABOUT THE MEMORANDUM

Since October 7, 2023, the State of Israel has been engaged in a war forced upon it by Hamas. This war is being waged not only in our own region, but also across the globe, in the western capitals, on campuses of prestigious universities, in the headquarters of the largest and most influential technology companies in the world; these entities have the power to directly and indirectly influence the narrative, the support for Israel, and the world's governments in a way that ultimately would affect Israel's room to maneuver in this war. In addition, it is impossible to disconnect the struggle from global contexts and from the competition of the superpowers. The INSS is committed to basic research on issues related to Israel's national security even in times of war, with the understanding that when the war ends, the strategic challenges facing Israel will necessitate a knowledge base that will be available to policymakers and decision makers. This work touches on one of the main factors shaping the world order and will return to occupy the State of Israel once the fighting ends.

The global economic situation is undergoing massive and profound changes. The global system that was formed after World War II and updated after the fall of the Soviet Union, created a flat world in which economic optimization dictates the location of production and the supply chain. The internet and improved transportation infrastructure have erased borders and accelerated communication and connection between different parts of the world. The global order changed in the early 2000s with the escalation of international terrorism, waves of migration, and a lack of trust between nations that led to a tightening of borders. The world suffered another blow with the arrival of the coronavirus pandemic, which utterly disrupted the supply chain and highlighted the security risks inherent in its fragility. And the most significant factor is the competition between the superpowers. The United States, in its efforts to maintain its global hegemony, is changing the rules of the game. The CHIPS and Science Act is merely a symptom of a broader phenomenon, in

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which national security plays a key role in a nation's economic considerations—even though security considerations do not coincide with economic rationale. Morality, global interests, and rivalries with competitors are all significant disruptive factors.

The State of Israel must prepare itself for the global change. Israel's starting position is good, since the security component is not new to the country's economic considerations. Independence and an understanding that diplomatic isolation and boycotts are possible have been formative elements in Israel's national security policy for many years. However, the economic revolution of the high-tech industry, coupled with its huge advantages, has warped Israel's strategic thinking. The locomotive of high-tech was allowed to develop from the bottom up and without any political strategy. It was only after years of achievements that the Israeli establishment began to create the infrastructure that paved the way for the country's cyber industry to take off. This kind of strategic approach is not suited to a changing world and to the information-intensive industries of the future.

In an era when infrastructure is a precondition for the next technological revolution and microchips are a key raw material, Israel needs a different strategy—one that analyzes the global aspects of the competition between China and the United States and allows Israel to navigate wisely between the two superpowers, minimizing the risks and paving the way for infrastructure that ensures security independence. The physical limitations of the Israeli economy clearly must be taken into account. Israel will not, it seems, ever be a world leader in microchip manufacturing. But Israel can be a dominant player in the development of the next generations of microchips, and it can create infrastructure that will be integrated into the global production system for microchips and components that will be critical in the development of artificial intelligence and quantum computing.

The following memorandum analyzes the global technological system in a way that will allow Israel to formulate a technological strategy. It is not yet

too late to determine such a policy. Israel needs this kind of policy, and we cannot rely on the "muscle memory" of the previous revolution—the cyber revolution. We must adopt a policy that includes government involvement, wherein the balance between the government and market forces is different from that which served us during the cyber era.

Tamir Hayman, Managing director of the INSS

During my years in the security establishment, I had the privilege of seeing how technological power fortifies the national security of the State of Israel. Israel's technological superiority, intellectual capital, and spirit of entrepreneurship and innovation are an asset of paramount importance to its standing in the world, no less than Israel's moral compass as part of the democratic and liberal world. Since October 7, Israel has been engaged in a bitter war in Gaza, at the end of which it will have to test its basic assumptions about almost every issue on the national agenda, including the ways in which technology affects its national security and international relations, as part of the great power struggle and global technological competition.

In an era characterized by fast technological progress and a geopolitical struggle between the United States and China, the global landscape is changing. Artificial intelligence is creating greater technological audacity, and the conventional logic of mutual dependence is becoming obsolete. The United States and China, which are often seen as the standard-bearers of the new technological arms race, are pouring enormous resources into building technological production factories and cultivating local chip industries in a way that is reshaping the balance of power and the global supply chain. In practice, it appears that the COVID-19 pandemic and the Russian invasion of Ukraine have pushed other countries in the world toward self-reliance and proactiveness in shaping global trade. There is increasing engagement in the research, development, and production of powerful technologies (big data processing, robotics, autonomic weapons, and more), in a way that forces Israel, as a technological power, to reevaluate its course. The world is reorganizing into technological alliances based on military interests, and reliance on the currents of globalization in the present era could leave Israel vulnerable to external pressures. Sitting on the fence while attempting to simultaneously enjoy the fruits of the West and the East is a risk to military stability. The private sector alone in Israel cannot cope with the competition emerging in Europe and Asia.

Israel has the human capital and the potential to cultivate a robust innovation ecosystem; already today it has the ability to allow a certain level of technological independence and to ensure sustainable national security. This is an opportunity to bring together the public and private sectors and to determine our fate together. Israel must recognize the fact that the reality around it is changing, and it must strive not only to adapt itself to this change but also to excel in the global technological competition. Israel needs proactive technological leadership and a strategy that will empower the economy and develop diplomatic leverage in the global arena.

I welcome the decision of the INSS to analyze the global technological changes from a geopolitical standpoint and to offer a first-of-its-kind position paper in this field. The idea of a "technology strategy" that is introduced in this memorandum expresses simple reasoning—the state's role is not only to direct private investment and encourage entrepreneurs but also to produce a complete system that allows human capital to serve Israel's national needs. Such a system includes increasing investment in research and development, as well as strengthening academia, infrastructure, and strategic partnerships between the public and private sectors, which will be expressed in regulation and venture capital management. This investment also enables diversification of the labor market in Israel and creates an opportunity to expand participation in the tech industry.

Tamir Pardo, former head of the Mossad

During my long years as an entrepreneur, manager, and investor, I have been intimately connected to the Israeli technology industry and have worked tirelessly to advance Israel's technology, with the understanding and knowledge that the state's national security and economic strength are intertwined, and both are tied to our technological capabilities—military and civilian alike. For my many years of activity, whether as a naval officer or as an engineer and businessperson, the guiding principle of Israeli industry was, in fact, the absence of a guiding principle. In many ways, this is how the high-tech industry that we know has developed. The State of Israel has been blessed with a huge number of people with enterprising spirit who strive to push the industry forward, invent innovative and revolutionary developments, and contribute to the country. On the wings of globalization, these young entrepreneurs could realize their ideas through cross-continental collaborations.

Believing that political and national conflicts would diminish, it was possible to decentralize the inputs required to realize an idea and to bring in the necessary funding, components, knowledge, or resources. For generations, the world acted on the assumption that globalization would continue to enable optimal access to the necessary resources. But tectonic changes are increasingly reshaping our conceptions of the industry. Technology makes it possible to lower the cost of living around the world, but the cost of its development is rising, and the capital required to realize complex technological ideas will increase. And meanwhile, the world is undergoing significant shifts that affect the way we perceive globalization: the COVID-19 pandemic, climate change, the Russian invasion of Ukraine, as well as the dangers of political instability and regime changes around the world, including threats to the democratic form of government in many countries, such as Israel. These changes have fundamentally affected the global tech industry, including ours. Above all, the war that was forced upon Israel on October 7 adds a new dimension that obligates Israel to begin a process of national strategic planning in the field

of technology, to ensure that this unique locomotive will continue to pull the Israeli economy forward in the coming decades.

We are seeing the changing face of globalization, perhaps even its decline and the return of models based on greater national self-reliance and on technological collaborations based in part on moral, diplomatic, and strategic ties to the bloc of democratic country. Israel's responsibility, in part, is to ensure the ability of tech entrepreneurs to access both sources of funding around the world, as well as the most advanced technological infrastructure and equipment to realize their business ventures. In addition, it is the state's responsibility to identify emerging areas of technology that should be encouraged and promoted, first and foremost by ensuring that the education system is able to train and prepare future generations of Israeli engineers.

Moreover, the state should adapt the tools of encouragement and support given to young entrepreneurs by the Innovation Authority or new technology incubators and national labs, which need to be established in emerging fields. In order to provide the State of Israel, its policy-shapers, and its decision-makers with the necessary tools for understanding the changing reality and the data for shaping a national technology concept, research papers such as this one are important. To the best of my knowledge, this is the first attempt by a research body of national and international stature such as the INSS to investigate the need for a national technology plan and to conduct an initial characterization of its components.

I hope that by reading this memorandum, policy-shapers in Israel will understand the great importance of adapting the Israeli tech industry to the changing reality and challenges and of ensuring optimal conditions so that it will continue to thrive. I had the pleasure of being Ariel Sobelman's manager when he first started out in the high-tech industry, and I commend his efforts of contributing not only to "practicing" in the industry itself but also to conducting policy-oriented research on these issues. I also hope that additional researchers will continue to further develop the ideas of

this memorandum and will enrich the public discourse on this issue, as the success of the Israeli tech industry is the success of the country.

Dov Moran, entrepreneur and investor