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Innovative Virtual Open Incubators Cluster (IVOIC) Strengthening Israel's Innovation Policy Strategy

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Abstract
State funding of industrial R&D is via the Israel Innovation Authority (IIA), with a focus on a case-by-case evaluation model, assessing each company and project independently. Despite its success, the case-by-case model has significant limitations such as lack of systemic intelligence. The isolated evaluation of projects prevents identification of cross-cutting trends in technologies. Adding to Project-Level, Innovative Virtual Open Incubators Cluster (IVOIC) level combining the principles of industrial clusterswith the capabilities of virtual collaboration networks offers a scalable, adaptive, and globally connected innovation framework.
IVOIC funding Strategy, leverage accumulated knowledge to group related innovations into clusters. This research is based on 225 successful Israeli disruptive and discontinuous innovations supported by the Israel Innovation Authority in industry. The foundation of our approach is inspired by the Open Incubators Innovation Cluster Model, which emphasizes openness, collaboration, and industry-driven innovation.
Keywords*: open incubator, cluster, innovation policy, discontinuous innovation, disruptive innovation*
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I. Introduction

The Israeli innovation policy, as defined by the Law for the Encouragement of Industrial Research and Development—1984 (the R&D Law), has been instrumental in fostering a thriving high-tech sector. The law primarily supports firms that engage in local R&D and production while targeting international export markets. However, the policy operates on a case-by-case evaluation, where each company and project is assessed individually and independently.

While this bottom-up flexibility is a strength, it also leads to fragmented knowledge accumulation. Over decades, the Israel Innovation Authority (IIA) has supported thousands of projects, but the strategic insights, patterns, and sectoral intelligence embedded in this rich dataset remain underutilized.

To improve innovation policy, Israel should transition from case-by-case support to data-informed strategic planning by creating knowledge-based clusters and thematic incubators that align with national priorities (e.g., climate tech, health resilience, food security).

II. Objective

Our objective is to establish a dynamic innovation clustering model grounded in Israel's most successful and impactful innovations across various domains and technological specializations. This initiative aims to create synergistic ecosystems that build upon the proven strengths of Israel's high-tech and innovation-driven industries.

The foundation of our approach is inspired by the Open Incubators Innovation Cluster Model (Bijaoui, 2024, 2025), which emphasizes openness, collaboration, and industry-driven innovation. The starting point of our model involves the formation of open incubators that are anchored in innovations supported by the Israel Innovation Authority- IIA (discontinuous and disruptive innovations).

Strategic Goals are to facilitate cross-sector innovation and knowledge transfer; Create scalable, collaborative ecosystems; Strengthen local economic growth and global competitiveness.

This dynamic clustering approach ensures long-term innovation sustainability, fosters agility in response to emerging global trends, and strengthens Israel's position as a global leader in technology and innovation ecosystems.

III. Innovation Types

Frugal innovation, also known as "Bottleaad innovation", emphasizes simplicity, affordability, and accessibility (Manoj, 2021). Inclusive innovation involves finding innovative solutions to problems, in the low-end market, by utilizing limited resources and constraints as opportunities for creativity.

Radical innovation represents the highest level of innovation, characterized by groundbreaking advances (Chandy & Tellis, 1998; Ettlie, Bridges, & O'Keefe, 1984). It is followed by discontinuous innovation, which opens entirely new markets (Danneels, Kleinschmidt, & Cooper, 2001), and disruptive innovation, which

introduces novel technologies that create solutions for emerging or underserved markets (Christensen, Verlinden, & Westerman, 2002; Markides, 2006).

Frugal innovation

The term "frugal" originates from the Hindi word *"jugaad"*—a colloquial expression meaning an inventive, improvised solution born out of necessity and resourcefulness (Khan, 2016). Frugal innovation addresses customer needs through creative, cost-effective approaches when resources are limited.

Despite its potential to serve underserved populations and stimulate local economic activity, frugal innovation aimed at the domestic market is currently not supported by the Israel Innovation Authority (IIA)**.**

Inclusive Innovation

Inclusive innovation targets broad, low-income market segments by creating livelihood opportunities and offering affordable solutions without compromising on quality or effectiveness. It is designed for consumers whose purchasing decisions are driven by cash availability and economic constraints (World Bank, 2013).

Despite its potential to reduce inequality and stimulate grassroots economic development, inclusive innovation focused on the local market is not currently supported by the Israel Innovation Authority (IIA).

Radical Innovation

Radical innovation is defined as the introduction of products that incorporate fundamentally different technologies and address core customer needs more effectively than existing solutions (Chandy & Tellis, 1998). These innovations often create entirely new platforms, targeting emerging needs in new markets through transformative solutions.

Radical innovation is typically driven by scientific breakthroughs and can significantly enhance the value delivered to both local and global economies. In Israel, such innovations are primarily supported at the academic level by the Ministry of Education and by domain-specific ministries such as Agriculture and Energy.

The Israel Innovation Authority (IIA) generally does not support radical innovations unless they are linked to export-oriented firms. However, fostering collaboration between scientific innovators and export-capable companies could open a path for IIA involvement—bridging fundamental research with commercial application and market scaling.

Discontinuous innovation

Discontinuous innovation creates a new technological or market trajectory, often requiring firms to move beyond their existing capabilities and prior experiences—essentially thinking "outside the box" (Tripsas & Gavetti, 2000; Hodgkinson & Sparrow, 2002). This type of innovation is marked by market newness, where potential customer segments exist, but actual demand has not yet emerged, and where firms must operate within a new competitive landscape (Picaud, 2013).

The Israel Innovation Authority (IIA) currently supports discontinuous innovations primarily when they target international markets, rather than leveraging their potential for local market development.

Disruptive Innovation

Disruptive innovation refers to the introduction of new technologies that address unmet or underserved needs within segments of the mainstream market (Di Minin and Corsi, 2011). These innovations typically offer a distinct set of features, performance levels, and price points, targeting two key market segments:

1. Customers willing to pay a premium for new value, and
2. Cost-sensitive users seeking "good enough" solutions at lower prices (Govindarajan et al., 2011).

The Israel Innovation Authority (IIA) supports disruptive innovations, which are primarily aimed at international markets due to their focus on emerging or newly defined market segments. These innovations often require a combination of intensive R&D and strategic marketing efforts to reach commercial viability.

without compromising on quality or effectiveness. It is designed for consumers whose purchasing decisions are driven by cash availability and economic constraints (World Bank, 2013).

Despite its potential to reduce inequality and stimulate grassroots economic development, inclusive innovation focused on the local market is not currently supported by the Israel Innovation Authority (IIA).

IV. Virtual Open Incubators

Traditional Incubator

A traditional incubator supports two to three dozen entrepreneurs or SMEs within a shared physical space. Entry is governed by predefined conditions set by the incubator's management.

Startups benefit from: Financial support; Professional mentoring; Administrative services.These are delivered by the incubator's staff and affiliated experts.

Open Incubator

The open incubator model extends the reach and impact of a traditional incubator by offering its services not only to current participants but also to: Graduated startups; External entrepreneurs and firms; Companies from related or supporting industries

These external actors are strategically aligned with the incubator's core domains, fostering cross-sector collaboration and innovation.

Virtual Open Incubator

A Virtual Open Incubator is a global support structure that may be established by: Venture capital firms; Private corporations; Public organizations (e.g., the Israel Innovation Authority, IIA).
It provides: Funding; Professional support and mentoring; Access to virtual tools and networks.
Participants are not confined to a single physical space and may operate from varied geographic or online locations.

The focus differs by initiator. Private entities: prioritize business scaling and returns. Public organizations: aim to foster regional/national development, economic diversification, and knowledge spillovers.

V. Virtual Open Incubators Cluster (VOIC) Model

The Virtual Open Incubators Cluster (VOIC) model represents a strategic evolution in innovation ecosystems by combining the principles of industrial clusters (Porter, 1998) with the capabilities of virtual collaboration networks (Passiante et al., 2002). It offers a scalable, adaptive, and globally connected innovation framework.

Model Structure and Evolution

The model begins with the establishment of a physical incubator in a selected domain. Over time, this incubator evolves through the following stages:
Virtual Incubator: Offers remote services and digital engagement with startups outside the original incubator.
Virtual Open Incubator: Expands beyond the original cohort to serve external entrepreneurs and firms across related domains.
Virtual Cluster: Formed by interconnecting multiple open incubators under a coherent governance structure across three strategic axes: Related Industries; Supporting Industries; Infrastructure Services.

This virtual clustering process is overseen by a governing board composed of representatives from: Industry; Government and public agencies (local and national); Academic and research institutions; Local communities

Core Functions of Each Open Incubator

To operate effectively within the VOIC model, each open incubator must:
Conduct Market and Technology Foresight: Continuously scan for emerging trends and strategic opportunities.
Implement Targeted Training Programs: Develop human capital tailored to the needs of the cluster.
Foster Innovation and Collaboration: Facilitate joint projects between startups, established firms, and research institutions.
Ensure Adaptive Governance: Align actions with evolving societal, technological, and industrial priorities.

Virtual Cluster Dynamics

A Virtual Cluster, as defined by Passiante et al. (2002), is a network of firms and institutions collaborating across geographies, enabled by ICT tools. It supports: Remote collaboration across regions and borders; Cross-institutional knowledge exchange; Joint innovation and resource sharing.

This concept leads to the Virtual Innovation System (VIS) (Romano & Passiante, 1997; De la Mothe & Paquet, 1998), where innovation is non-linear, iterative, and co-produced by a network of diverse actors.

Governance and Policy Integration

Each VOIC Board includes: Local and national public authorities; Economic stakeholders from the relevant domain; Representatives from academia and the entrepreneurial ecosystem;
Board responsibilities include: Coordinating strategy execution at both local and national levels; Identifying financial instruments and professional support programs; Aligning innovation activities with regional and national priorities.

Innovative VOICs under IIA Policy

Current Israeli innovation policy, under the Law for the Encouragement of Industrial R&D (1984), primarily supports individual high-tech projects through the Israel Innovation Authority (IIA). To strengthen system-level impact and sector-wide innovation, we propose a complementary policy track:

Innovative VOICs Initiative

Objective: Expand IIA's support to Virtual Open Incubators Clusters that group strategic domains and interrelated actors.

Mechanism:

Firms applying for IIA support will be invited to join a relevant VOIC.

A dedicated IIA VOIC Board will oversee project selection, define incentives, and coordinate cross-firm initiatives.

Benefits:

Enhances system intelligence by linking related innovations; Reduces duplication and accelerates knowledge diffusion; Facilitates scale-up and market integration of supported projects.

Targeted VOIC Domains

Initial implementation of the model will focus on the following domains:

Agriculture and Water Treatment; Food Tech; Healthcare; Telecommunication and Security; Energy; Microelectronics; Management Platforms and Tools; AI Applications; Defence Technologies

The sample

This research is based on the most successful Israeli radical innovations supported by the Israeli Ministry of Education in universities and disruptive and discontinuous innovations supported by the Israel Innovation Authority in industry.

This study examines 229 high-impact innovations supported by the Israel Innovation Authority (industry), including:

94 Discontinuous Innovations (in Agriculture, Energy, Healthcare, Telecommunications).

135 Disruptive Innovations (in Agriculture, Healthcare, Energy, Platforms, Digital Imaging, Education, Defense).

Discontinuous Innovations analysis 94

Agriculture 16
Energy 8
Healthcare 30
Cosmetics 4
Healthy food 15
Telecommunication and Security 8
Digital imaging 13

Disruptive innovations 135

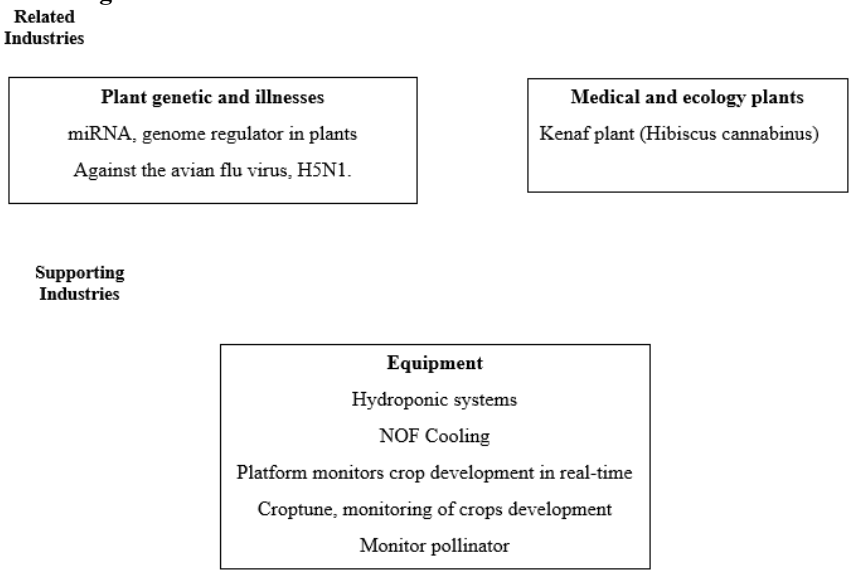
Agriculture and water treatment 19
Energy 2
Healthcare 17
Telecommunication 33
Micro electronics 9
Hardware Software platforms 21
AI platforms 23
Digital imaging 2
Defense 9

Agriculture and water treatment IVOICs of discontinuous innovations

miRNA, genome regulator in plants
Kenaf plant (Hibiscus cannabinus)
Monitor pollinator
Platform monitors crop development in real-time
NOF Cooling
Croptune, monitoring of crops development

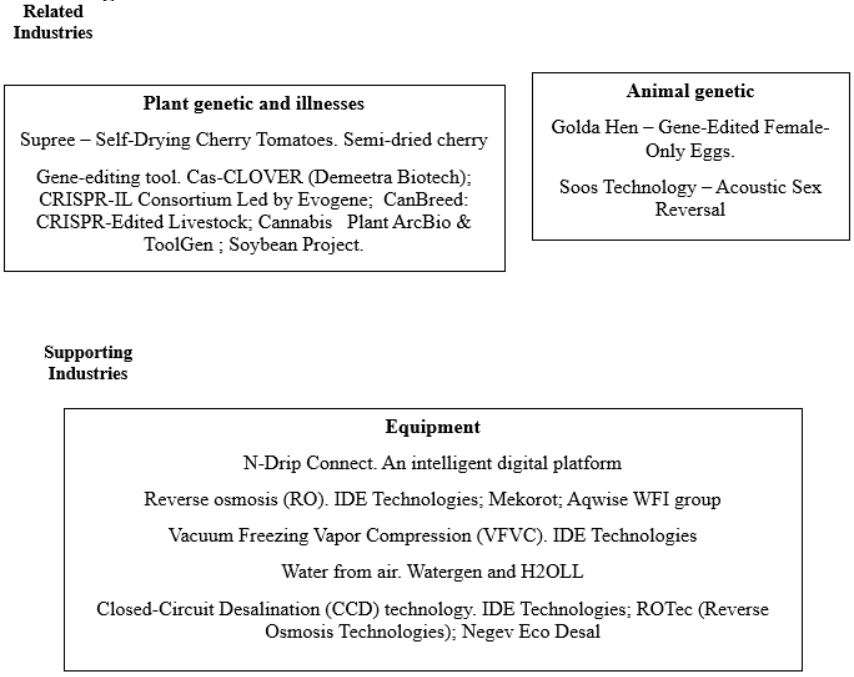
Hydroponic systems
Against the avian flu virus, H5N1.

Exhibit 1.1: Agro business and water treatment in discontinuous innovations IVOICs



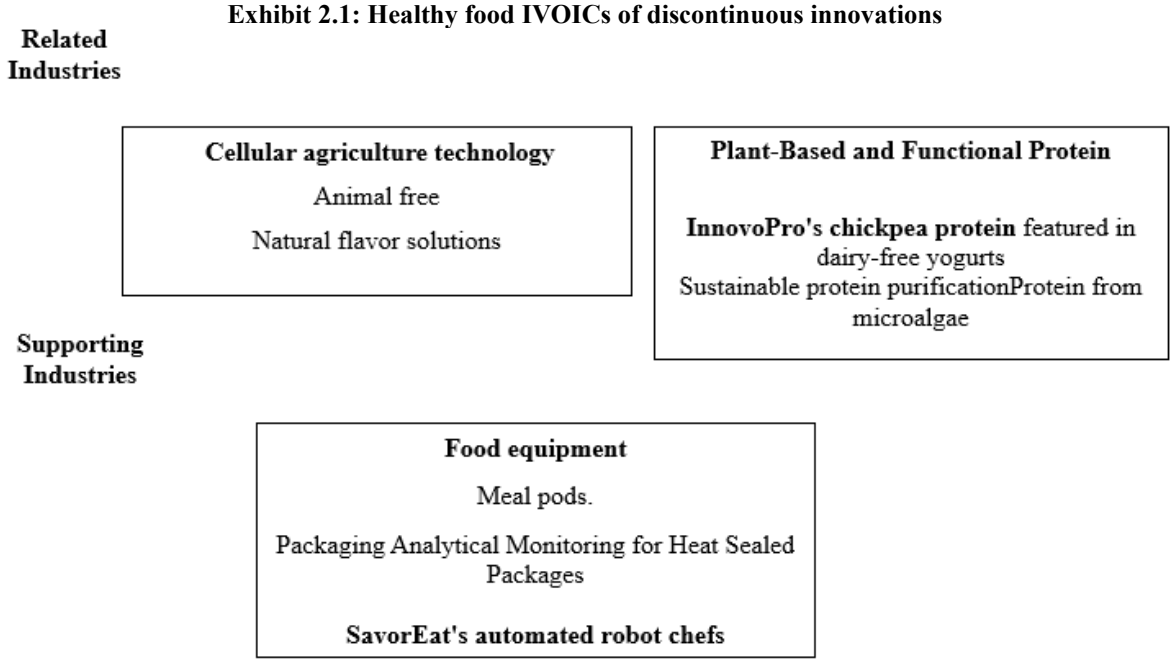
Agriculture and water treatment IVOICs of disruptive innovations
N-Drip Connect. An intelligent digital platform
Supree – Self-Drying Cherry Tomatoes. Semi-dried cherry
Golda Hen – Gene-Edited Female-Only Eggs.
Soos Technology – Acoustic Sex Reversal
Gene-editing tool. Cas-CLOVER (Demeetra Biotech); CRISPR-IL Consortium Led by Evogene; CanBreed: CRISPR-Edited Livestock; Cannabis Plant ArcBio & ToolGen ; Soybean Project.
Reverse osmosis (RO). IDE Technologies; Mekorot; Aqwise WFI group
Vacuum Freezing Vapor Compression (VFVC). IDE Technologies
Water from air. Watergen and H2OLL
Closed-Circuit Desalination (CCD) technology. IDE Technologies; ROTec (Reverse Osmosis Technologies); Negev Eco Desal

Exhibit 1.2: Agro business and water treatment IVOICs of discontinuous innovations



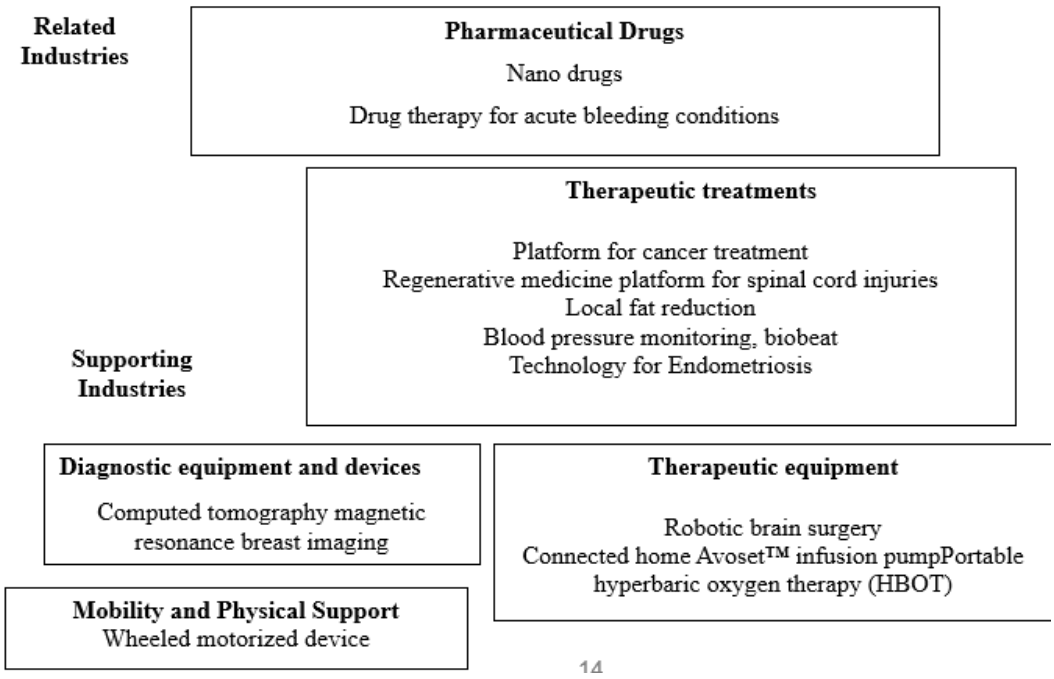
Healthy food IVOICs of discontinuous innovations
Cellular agriculture technology
Animal free
Natural flavor solutions
Plant-based food products
InnovoPro's chickpea protein featured in dairy-free yogurts
Sustainable protein purification
Protein from microalgae
Proteins from plants
Plant-based fish fillets
Meal pods.
SavorEat's automated robot chefs
Packaging Analytical Monitoring for Heat Sealed Packages

Exhibit 2.1: Healthy food IVOICs of discontinuous innovations



Healthcare IVOICs of discontinuous innovations
Computed tomography magnetic resonance breast imaging
Robotic brain surgery
Connected home Avoset™ infusion pump
Portable hyperbaric oxygen therapy (HBOT)
Drug therapy for acute bleeding conditions
Technology for Endometriosis
Wheeled motorized device
Cell membrane of mesenchymal stem cells (MSCs)
Platform for cancer treatment
Regenerative medicine platform for spinal cord injuries
Local fat reduction
Glucoma drug
Blood pressure monitoring, biobeat
Nano drugs

Exhibit 2.1: Healthcare IVOICs of discontinuous innovations



Healthcare IVOICs of disruptive innovations

Hematology Oncology Paediatric Excellence (HOPE) generic drugs for Sub Saharan Africa

Medinol is the standout Israeli stent manufacturer

Corindus (robotic PCI)

Tryton bifurcation stents.

PillCam SB capsule. Diagnosing obscure GI bleeding, Crohn's disease, small-bowel tumors, iron-deficiency anemia, NSAID-related injury, and malabsorption syndromes

Nano-artificial nose. Detected lung and head + neck cancers with high accuracy. Capable of detecting breast, colorectal, prostate cancers and Alzheimer's or Parkinson's

Home pregnancy monitor. HeraMED – HeraBEAT. Smartphone-based Doppler fetal heartbeat monitor for home use.

Intense Pulsed Light (IPL). Lumenis. Photorejuvenation (pigment, vascular lesions), acne. Applications now span cosmetic, dermatologic, ophthalmic, and emerging AI-enhanced treatments.

Non-invasive glucose monitoring devices. *OrSense.* Developed the NBM-200G and earlier NBM-100G, this wearable ring gently occludes blood flow and uses optical spectroscopy to measure glucose, hemoglobin, and SpO_2

GlucoTrack. .A handheld ear-clip sensor combining ultrasonic, electromagnetic & thermal measurement techniques

HAGAR GWave. Uses radio-frequency waves to measure blood glucose in real time

Gili Medical Hypoglycemia Monitor – Non-invasive Hypoglycemia Alert. Designed for nocturnal hypoglycemia detection in adolescents with T1D.

SensPD. Early Detection of Autism, SensPD uses modified oto-acoustic emission (OAE) technology built into standard newborn hearing tests.

Matricelf. Print 3D heart using human tissue. a TAU spin-off, licensed the technology and is also working on personalized spinal cord implants.

Like a Fish. Oxygen from water..''Like a Fish''. Invented by Alon Bodner, this wearable vest uses a high-speed centrifuge to mimic gill-like extraction of dissolved oxygen from water.

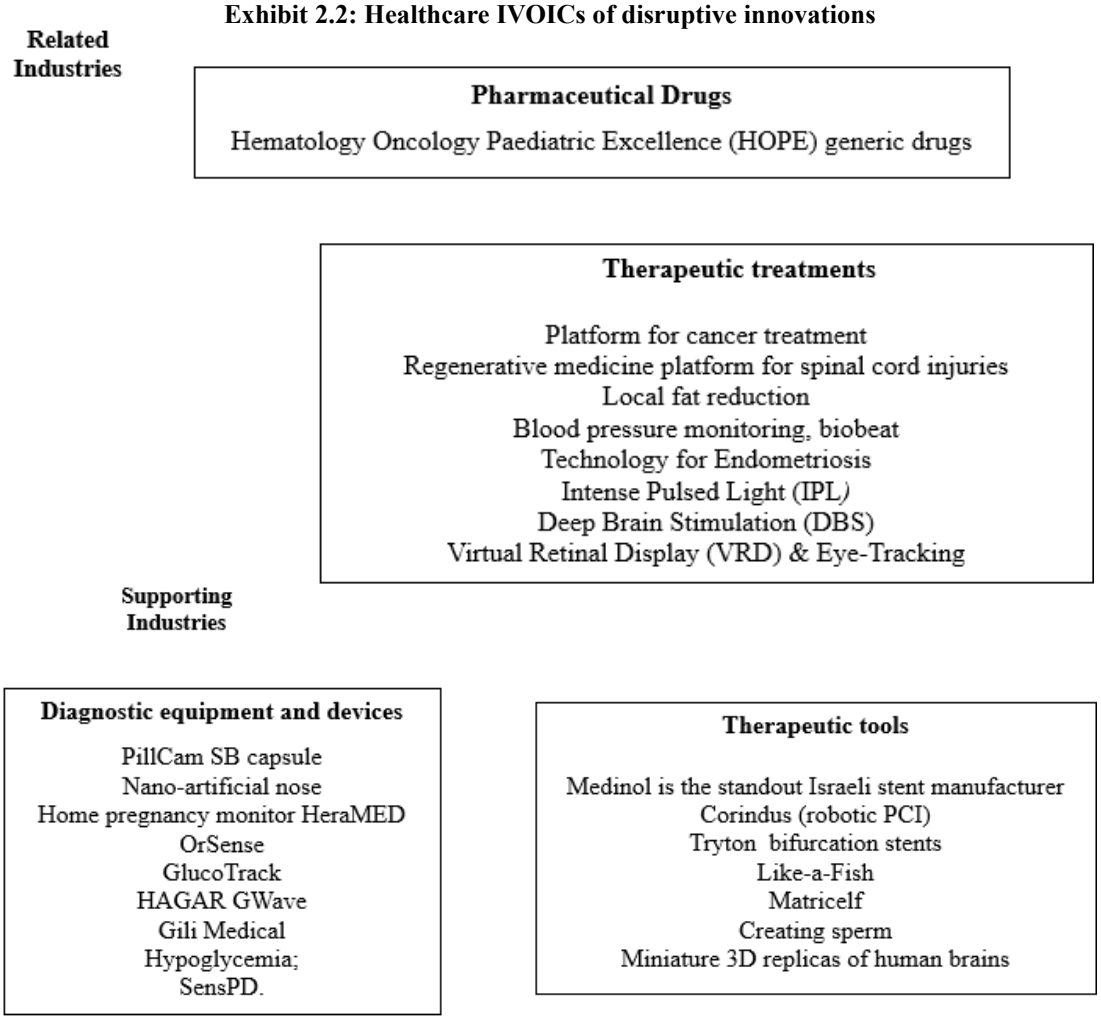
Prof. Mahmoud Huleihel. Creating sperm in a laboratory through a microfluidic system using a silicon chip (Polydimethylsiloxane PDMS)

Deep Brain Stimulation (DBS) procedure for Parkinson's, dystonia, essential tremor, Tourette's, and clinical trials for depression

Virtual Retinal Display (VRD) & Eye-Tracking, EyeJets. Combining laser-based retinal display with ultra-fast gaze correction, paving the way.

Miniature 3D replicas of human brains. With living tumor models, perfusable organoids, and vascular systems using advanced PDMS/microfluidics, 3D bioprinting, and stem-cell technologies.

Exhibit 2.2: Healthcare IVOICs of disruptive innovations



Telecommunication and Security IVOICs of discontinuous innovations

Cloud servers

Nebius Israel (by Aman)

Offers localized cloud services (compute, storage, virtual private cloud) from three Israeli data centers, with pay-as-you-go Hebrew/English support and compliance with national regulations..

Vultr

Entered the market in April 2023 with a Tel Aviv data center through Bezeq, delivering affordable cloud compute, block storage, Kubernetes, and bare-metal services.

Acronis

Opened a Tel Aviv-based cloud data center in 2021 targeting managed service providers and MSPs, offering cyber protection and backup services.

Anan Data Centers

Operates underground, high-security facilities in Afula and Tzora with 96 MVA power, tailored for HPC and AI workloads.

ASOCS

Provides on-prem and virtual private cloud solutions for industries including telecom, hospitality, and sports, using vRAN technologies.

Infinidat
Specializes in enterprise data storage solutions, recently acquired by Lenovo for global expansion.

CTERA Networks
Offers cloud storage gateways, distributed file services, and hybrid-cloud tools, partnering with AWS, HPE, IBM and enterprises like Deutsche Telekom.

K2view
Provides real-time data integration and synthetic data generation, ideal for Geneva enterprises using hybrid/multi-cloud environments.

Exhibit 3.1: Telecommunication and Security IVOICs of discontinuous innovations

Related Industries
Cloud servers
Nebius Israel (by Aman)
Vultr
Acronis
Anan Data Centers
ASOCS
Infinidat
CTERA Networks
K2view

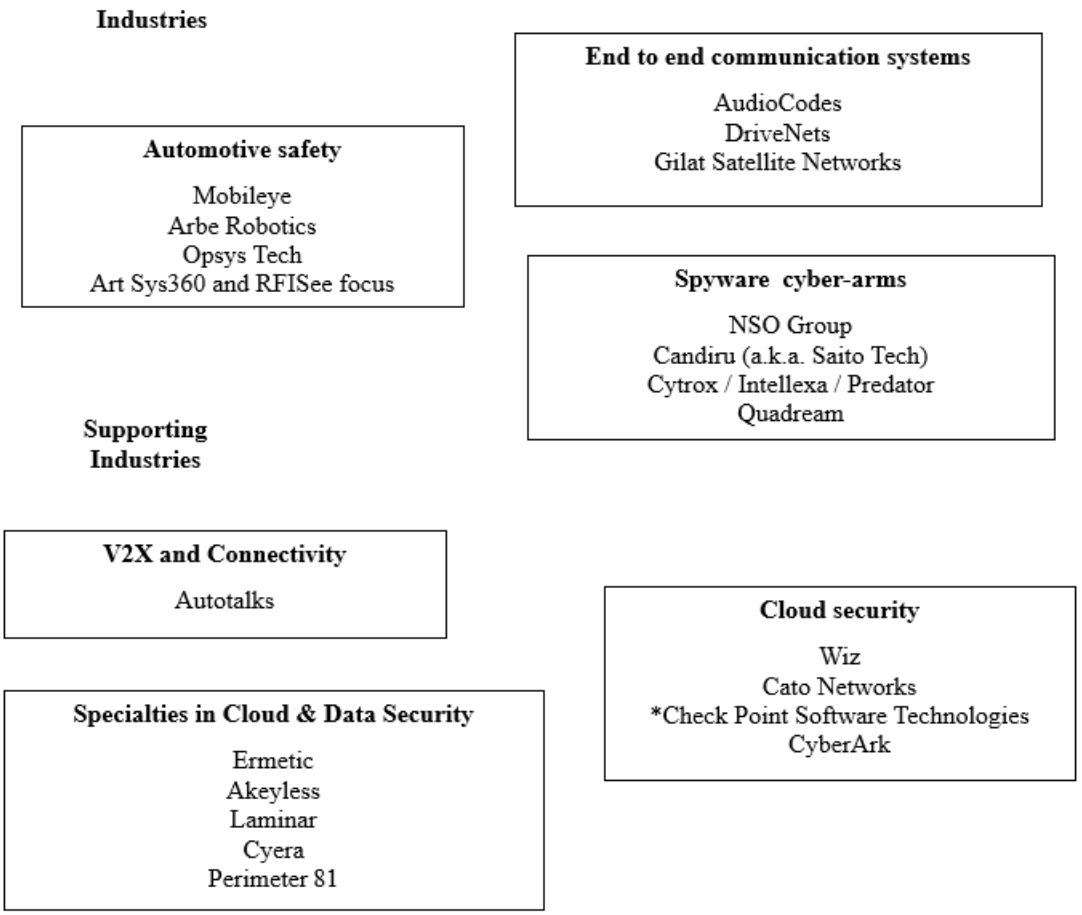
Telecommunication and Security IVOICs of disruptive innovations
End-to-end communication solutions
AudioCodes provides complete VoIP systems—session border controllers, IP phones, media gateways.
DriveNets delivers a cloud-native network OS for telcos, enabling disaggregated routing on white-box hardware.
Gilat Satellite Networks offers end-to-end VSAT satellite communication systems,
Networks
Comverse. Enterprise-grade PBX/cloud VoIP: Voicenter, Bynet, myTnet, Voipe — all integrate voicemail-to-email, IVR, call routing.
Consumer apps: TextVoice leads in voice transcription and missed-call intelligence.
Backend powerhouses: AudioCodes, VocalTec, Tdsoft, Mind CTI & CALLUP build and support core telecom technologies.
Cross-platform instant messaging (IM) and VoIP client
Viber. Founded in 2010 in Tel Aviv by Talmon Marco and Igor Magazinnik, Viber offers free voice calls, video calls, text messaging, group chats, stickers, and end-to-end encryption across iOS, Android, Windows, macOS, Linux. In February 2014, Viber was acquired by Japanese e-commerce giant Rakuten for $900 million.
Automotive safety
Mobileye leads globally in camera-based ADAS chips and software—EyeQ processors, REM mapping, SuperVision, Drive and Robotaxi systems embedded in hundreds of millions of vehicles.
Arbe Robotics delivers ultra-high-resolution 4D imaging radar (down to 1° resolution at +300 m), enabling advanced object detection and classification
Opsys Tech integrates windshield-based optical sensors across vehicles for full-field-of-view scanning at high resolution.
Art Sys360 and RFISee focus on miniature solid-state 3D radar sensors generating real-time peripheral mapping even under poor visibility en.globes.co.il.
V2X and Connectivity
Autotalks is the global leader in V2X semiconductors, enabling seamless vehicle-to-vehicle, vehicle-to-infrastructure, and V2M communication. Their chips are already being standardized in new models as of 2024
Spyware cyber-arms

NSO Group – Pegasus enables zero-click surveillance of smartphones, allowing remote access to calls, messages, cameras, and location.
Candiru (a.k.a. Saito Tech). Their spyware ("DevilsTongue"/"Sherlock") exploits zero-days to infect Windows, iOS, Android
Cytrox / Intellexa / Predator. Offers zero-click tools similar to Pegasus; tied to "Predator" spyware used in Greece, Saudi Arabia, Bangladesh via Cyprus
Quadream focused on iPhone-targeted zero-click spyware
Allegedly sold to Saudi Arabia and others before reportedly folding around April 2023

Cloud security
Wiz. Recently acquired by Google/Alphabet in a record-setting $32 billion deal—the largest ever in cybersecurity—Wiz specializes in agentless cloud security posture management (CSPM) across AWS, Azure, GCP, Kubernetes, and IaC environments
Cato Networks. Coined the SASE pioneer, merging SD-WAN, managed network security, CASB, firewalling, and zero-trust into a global cloud-native platform.
**Check Point Software Technologies.* Long-time leader offering cloud security tools alongside firewalls and mobile defence. Revenue in 2023 reached ~~NIS 7.83 billion (~~$2 billion) with strong net margins.
CyberArk. The veteran identity-security expert in Privileged Access Management (PAM).

Specialties in Cloud & Data Security
Ermetic: Cloud-native infrastructure security platform (CSPM/IAM)
Akeyless: Secrets & machine identity management in the cloud,
Laminar: DSPM specialist offering agentless discovery and classification of cloud data stores.
Cyera: Data security and compliance platform with agentless scanning and posture management
Perimeter 81: Zero-Trust Network Access and SASE provider
Lightspin. Contextual, code-to-cloud cloud security platform—another notable player
Web application Firewall

Exhibit 3.2: Telecommunication and Security IVOICs of disruptive innovations



Management Platforms and Tools IVOICs of disruptive innovations

Microservices Management Platform

*Kong.*Provides an API gateway and microservices management platform that handles authentication, rate limiting, analytics, and service mesh integration.

Solo.io. Provides advanced API gateways and service mesh management for microservices.

Tufin. Helps manage complex microservices communication by automating security policy enforcement across hybrid cloud and microservices setups.

SpectralOps. Offers security and governance tools for microservices code and configuration, scanning infrastructure-as-code (IaC).

StackPulse. Provides a continuous operations platform with automated remediation, ideal for microservices ecosystems that require real-time monitoring and incident management.

Software testing

Mercury Interactive was a pioneering company in the field of software testing and quality assurance tools. It was acquired by Hewlett-Packard (HP) in 2006.

Testim. providing an AI-based test automation platform.Leverages machine learning to create, execute, and maintain automated UI tests with less flakiness.

Applitools. Specializes in visual AI testing and visual validation tools to catch UI regressions. Offers AI-powered visual checkpoints integrated into Selenium, Cypress, and other test frameworks.

Qyrus. Provides automated testing services and platforms for functional and performance testing. Focuses on DevOps integration and supports web, mobile, and API testing.

Logging and recording software

*Globit*el – SpeechLog Call Recorder.A widely used, TDM/VoIP-based solution for call centers

Avdor CIS – Crystal Quality Suite

This platform records voice, screen, chat, text, and email interactions. It includes advanced reporting, analytics, compliance logging (e.g., CDRs), and agent performance dashboards.

Lanonyx – Telestat.Provides phone call logging and recording (SIP, ISDN, analog). Itemised billing, detailed call reports, leaderboards, remote recording access—all with a one-time license

Acmatel / Deepijatel – Voice Loggers. These systems offer multi-channel analog, digital, and VoIP voice logging; real-time monitoring; secure browser interfaces; CRM integration; and hardware-based recording modules.

Glassbox, platform offering session-replay analytics. It captures user behavior on web and mobile apps to help diagnose UX issues, optimize flows, and reduce friction.

Cellebrite. a global leader in digital forensics tools (e.g., UFED) for law enforcement and enterprises.

The CuBox series by *SolidRun* is a pioneering family of cube-sized, low-power mini-PCs powering a range of applications from home streaming to embedded IoT solutions. They're developer-friendly, Linux/Android-capable, and appreciated for their power efficiency and compact form factor.

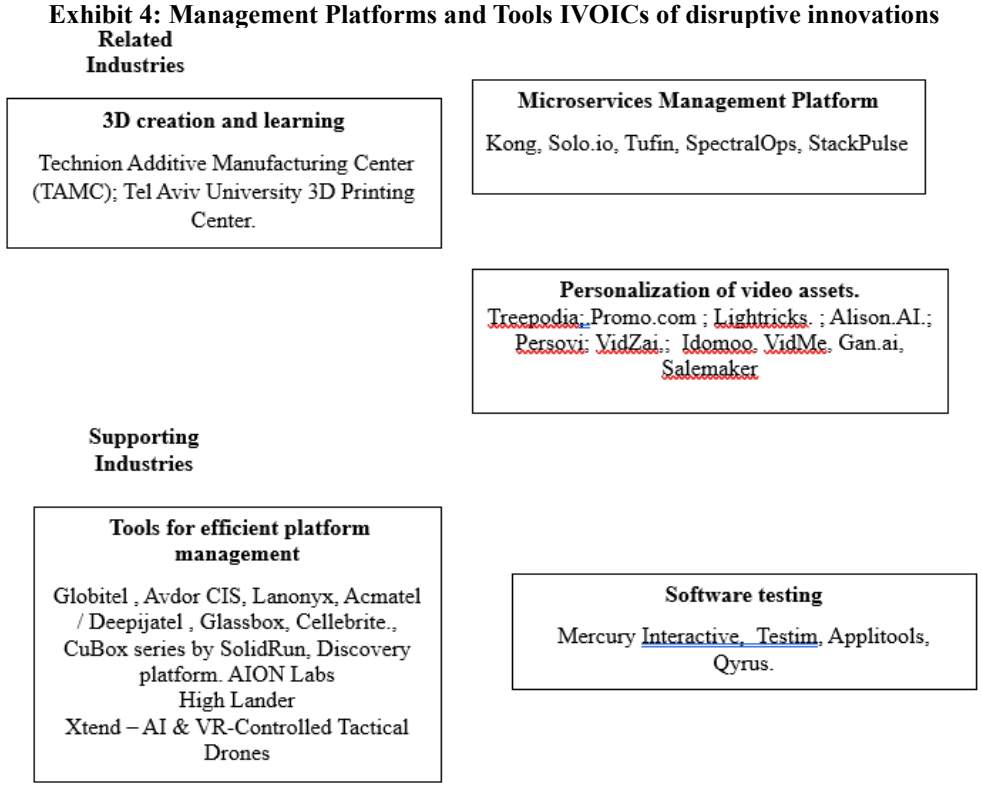
Discovery platform. *AION Labs* – AI-Powered Venture Studio is a consortium-driven venture studio backed by Pfizer, AstraZeneca, Merck KGaA, Teva, AWS, and Israel Biotech Fund, powered by BioMed X and supported by the Israel Innovation Authority.

Personalization of video assets. *Treepodia;.Promo.com ; Lightricks. ; Alison.AI.; Persovi; VidZai,; Idomoo, VidMe, Gan.ai, Salemaker*

Converting off-the-shelf drones into super drones. *High Lander* – Full Autonomy via Software; *Xtend – AI & VR-Controlled Tactical Drones*

3D creation and learning. Technion Additive Manufacturing Center (TAMC); *Tel Aviv University 3D Printing Center.*

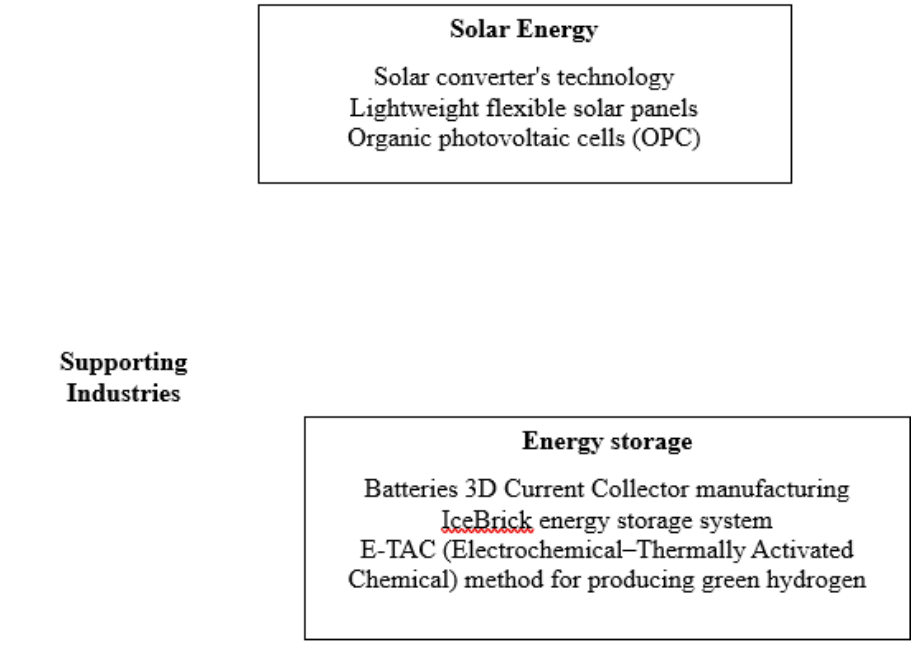
Exhibit 4: Management Platforms and Tools IVOICs of disruptive innovations



Energy IVOICs of discontinuous innovations

Solar converter's technology
Lightweight flexible solar panels
Organic photovoltaic cells (OPC)
Batteries 3D Current Collector manufacturing
IceBrick energy storage system
E-TAC (Electrochemical–Thermally Activated Chemical) method for producing green hydrogen

Exhibit 5.1: Energy IVOICs of discontinuous innovations

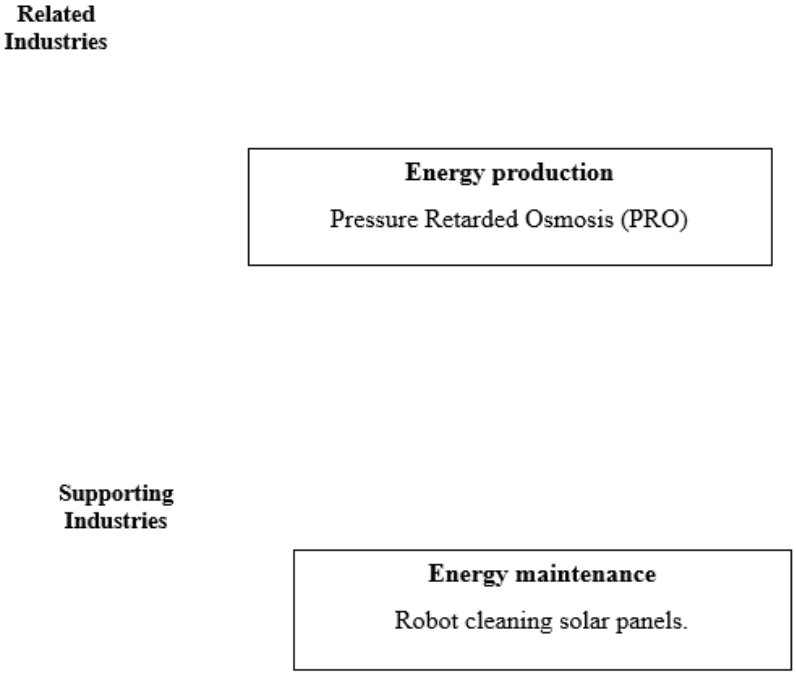


Energy IVOICs of disruptive innovations

Pressure Retarded Osmosis (PRO) producing power by a reverse electrodialysis heat engine (RED) from the osmotic pressure difference between freshwater and seawater or brine. Prof. Sidney Loeb BenGurion

Robot cleaning solar panels. Ecoppia. Uses microfiber and airflow (no water). Powered by solar energy and controlled via cloud platform.

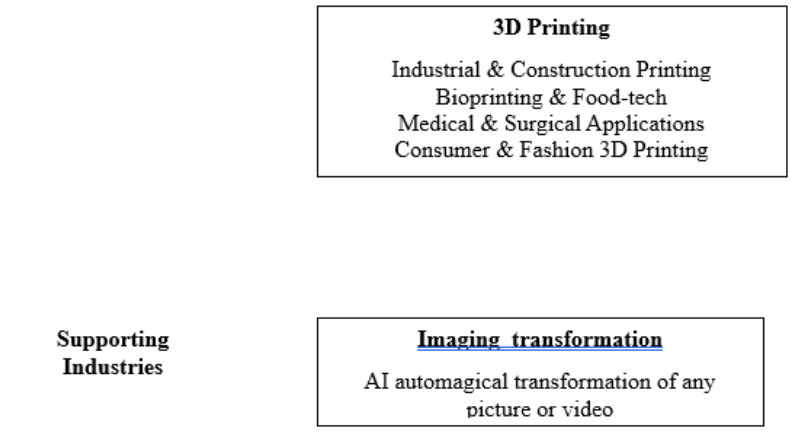
Exhibit 5.2: Energy IVOICs of disruptive innovations



Digital imaging IVOICs of discontinuous innovations

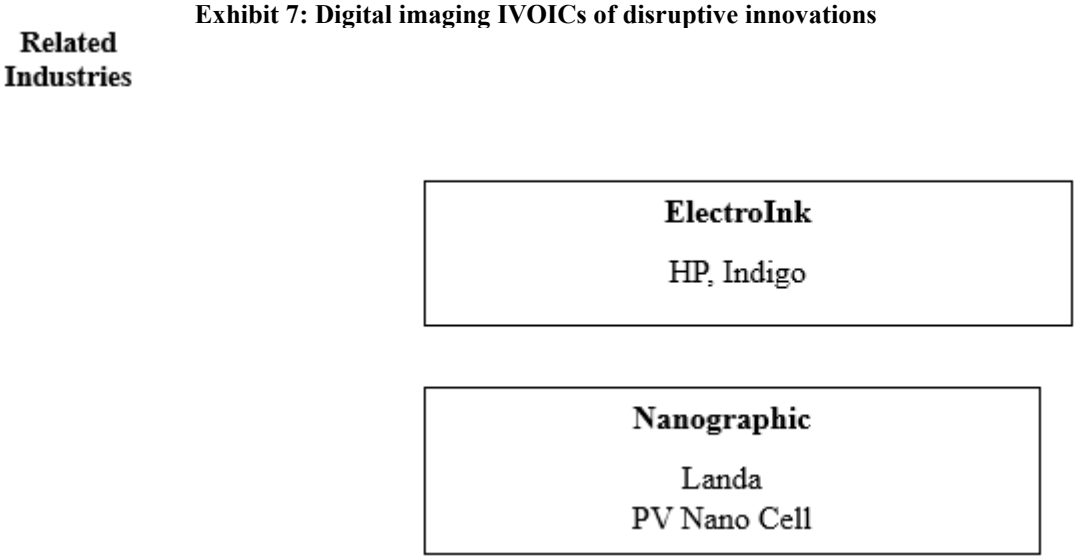
3D Printing. Industrial & Construction Printing
3D Printing. Bioprinting & Food-tech
3D Printing. Medical & Surgical Applications
3D Printing. Consumer & Fashion 3D Printing
AI automagical transformation of any picture or video
FreeD technology Video
Digital thread-dyeing system

Exhibit 6.1: Digital imaging IVOICs of discontinuous innovations



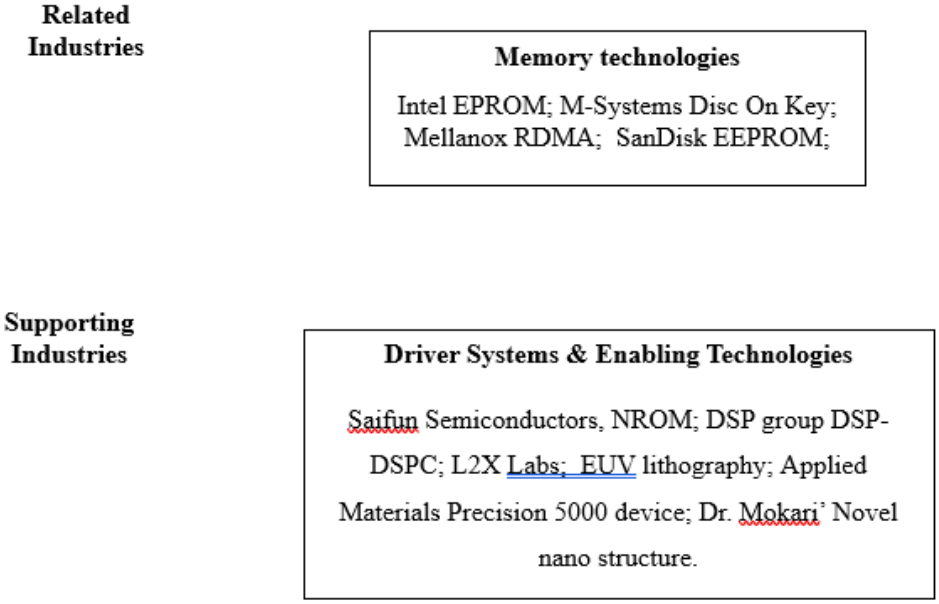
Digital imaging IVOICs of disruptive innovations
Landa Nanographic Printing & NanoInk
HP Indigo & ElectroInk
PV Nano Cell – Conductive Nano-inks. specializes in inkjet conductive inks: silver, carbon, dielectric, gold—used for printed resistors, capacitors, and sensors
Nano Dimension & XTPL – Printed Electronics Ink. partners with Poland's XTPL to develop high-performance conductive nanoinks for additive manufacturing electronics (AME), enhancing 3D-printed circuits and devices.

Exhibit 7: Digital imaging IVOICs of disruptive innovations



Micro electronics IVOICs of disruptive innovations
Intel EPROM; M-Systems Disc On Key; Mellanox RDMA; SanDisk EEPROM; Saifun Semiconductors, NROM; DSP group DSP-DSPC; L2X Labs , EUV lithography; Applied Materials Precision 5000 device; Dr. Mokari' Novel nano structure.

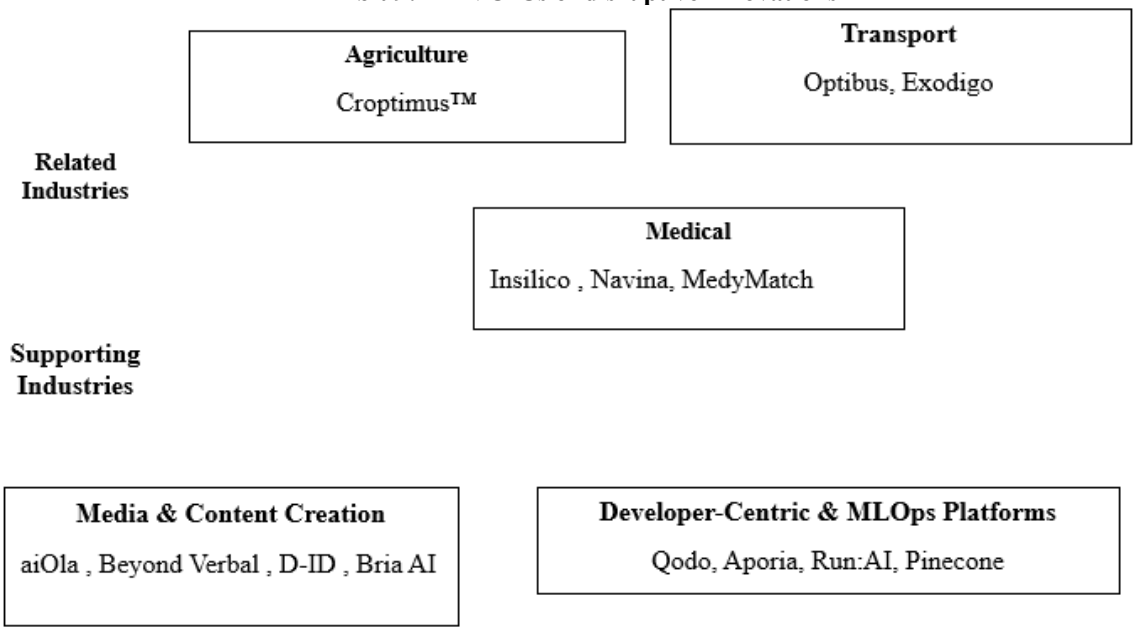
Exhibit 8: Micro electronics IVOICs of disruptive innovations



AI IVOICs of disruptive innovations
Developer-Centric & MLOps Platforms
Qodo (formerly CodiumAI) – AI-powered code integrity and testing platform.
Aporia – ML observability platform enabling anomaly detection and model monitoring.
Run:AI – Virtualizes deep-learning infrastructure, optimizing GPU utilization for large-scale model training.

Pinecone – Leader in vector databases tailored for similarity search, recommendation systems, and LLM use cases.
Navina – Healthcare AI copilot that integrates with EHRs to detect clinical insights, medication conflicts, and now working on ambient scribing.
Reco – AI-first security platform focused on SaaS environments, with a $55 M Series A extension
Finout – Cloud cost management & optimization AI platform
Exodigo – Uses AI + sensor fusion for underground mapping (infrastructure, utilities)
D-ID – Specializes in photorealistic AI-generated digital humans and video—$48 M funding; strong in marketing and video avatars
Bria AI – Visual generative AI for enterprise-scale image/video creation and editing, prioritizing copyright-safe content
Visionary.ai – Low-light video & image enhancement via AI; partnered with Qualcomm, NVIDIA, and CEVA.
aiOla – Conversational AI platform enabling legacy industries to go digital via speech recognition across 120+ languages.
Beyond Verbal – Emotion analytics via voice, capable of inferring sentiment and even health markers.
Chorus.ai – Real-time transcription/analysis of sales calls, with actionable insights to improve performance.
Cortica – Computer vision platform translating neural concepts into real-time recognition for smart cities and autonomous systems.
Logz.io – Cloud-based AI log-analysis platform for DevOps and system monitoring.
MedyMatch – Medical imaging assistant focusing on stroke and trauma detection in partnership with Samsung & IBM.
Nexar – AI-powered dashcam app for accident analysis and situational awareness.
Robust Intelligence – AI firewall that validates and sanitizes data inputs to protect AI models.
Fund*Guard* – AI-driven cloud-native platform for investment management and operations.
EverC – Fraud detection AI tool for banking led by Israeli entrepreneurs.
Optibus – AI-based software for public transport planning and scheduling
Insilico Generative AI Software for Drug Discovery
Croptimus™ AI Pest and Disease Detection for Agriculture

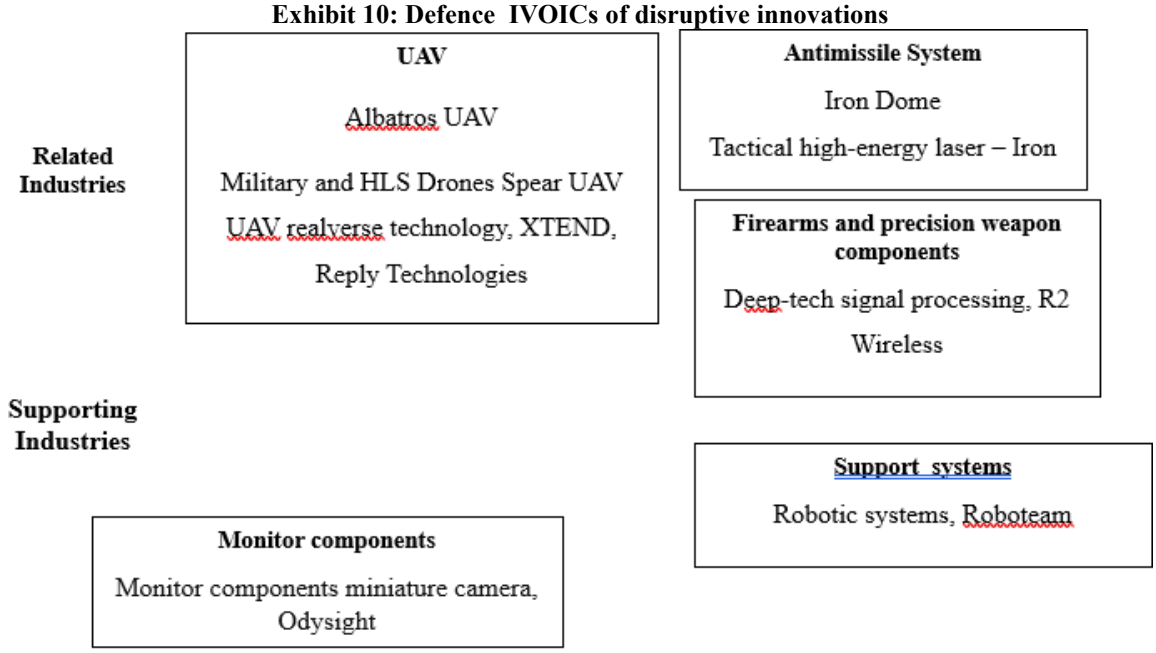
Exhibit 9: AI IVOICs of disruptive innovations



Defense IVOICs of disruptive innovations
Albatros UAV
Military and HLS Drones Spear UAV
UAV realverse technology, XTEND, Reply Technologies
Arrow Antimissile System
Iron Dome
Tactical high-energy laser – Iron Beam
Rrobotic systems, Roboteam

Monitor components miniature camera, Odysight
Deep-tech signal processing, R2 Wireless

Exhibit 10: Defence IVOICs of disruptive innovations



VI. Conclusion

While Israel's case-by-case evaluation model has achieved notable success, it also reveals structural limitations—chief among them, the absence of systemic intelligence. Evaluating projects in isolation hinders the ability to detect cross-cutting technological trends, such as the convergence of artificial intelligence in biotechnology or the integration of water and energy systems.

To address this gap, Israel's innovation policy should evolve by complementing project-level support with an Innovative Virtual Open Incubators Cluster (IVOIC) level strategy.

This approach would capitalize on the Israel Innovation Authority's (IIA) accumulated insights to group related innovations into thematic clusters—such as medical nanotechnology, climate-smart agriculture, or defense-oriented AI. These clusters would receive multi-year strategic funding and be anchored by open innovation incubators that foster collaboration among startups, academia, government agencies, and industry.

Israel already has much of the infrastructure needed to implement this model. What is now required is institutional coordination and political will to shift from a purely case-by-case support system to a more strategic, knowledge-driven innovation policy. Such a transition would enable more coherent national planning, enhance support for discontinuous and disruptive innovations, and generate stronger economic and societal impact.

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