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Catalyst | Tel Aviv (formerly ITT)
May 2019

Future of Work Tech
Emerging Landscape in Israel

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Overview

Jeff Schwartz, US Leader, Future of Work,
US Leader, Catalyst | Tel Aviv (formerly ITT)

The Future of Work is being driven by three forces changing how and where we work: automation and cognitive technologies, which are augmenting how people and machines work together; new workforce portfolios, including full-time, part-time, managed services, freelancers, gig workers, and crowds; and new ways of working, influencing where, how, and when we work and collaborate.

This report aims to shed light on two areas:

The first regards Deloitte's perspectives on the Future of Work. We have been studying and working with clients around the world on these issues since 2013. In automation, how will we use new technologies, from robots to artificial intelligence shape our jobs and how we work? What forces are driving alternative workforce arrangements, and how do we think about new talent models from employees (on- and off- balance sheet) to freelancers, gig workers, and crowds? And how will we redesign new work places to foster collaboration and virtual and remote work. The second is to explore the Israeli startup landscape – a preliminary analysis of companies building products, solutions, and services that are powering these new dimensions of the Future of Work.

The report is organized into three sections.

1. The first presents Deloitte Consulting's evolving framework about how to think about the Future of Work.

2. The second section provides a series of case studies showcasing Israeli startups, who are pioneers in the emerging field of future of work technology. We present an exploratory landscape summarizing these companies.

3. The third is our first analysis of 80 startups in Israel working across these three dimensions of the Future of Work (work, workforce, workplace).

We anticipate the Future of Work technology landscape will continue to grow and expand in the coming years. As in all startup landscapes, the Future of Work tech mapping is extremely dynamic. We welcome both comments and additions so we can continue to explore and share information on this sector.

Introduction

Amit Harel, Israel Leader, Catalyst | Tel Aviv (formerly ITT)

The Israeli startup marketplace is quite large, considering the geographic size of the country. With over 7,000 active startups in the ecosystem, Israel is a hotbed of technological innovation. Per capita, Israel received more in venture capital investment than any other country in the world. In 2018 alone, startups here raised over $6.4 billion in funding. The cutting-edge technologies developed here have applications far beyond the local marketplace, especially as business leaders consider the shifting landscape facing their organizations.

They understand that technological innovation is fundamentally disrupting business as we know it, and that it is crucial to embrace this reality at the risk of being left behind. In the last five years, American companies have acquired more than 235 Israeli startups. 368 global corporates have R&D or innovation centers here, thanks to Israeli's nearly unparalleled tech talent. Israel's military, the IDF, sources from a young talent pool to develop soldiers who go on to become engineers, programmers, and developers with experience in cyber defense. Their diverse problem-solving perspectives and hands-on experience powers an innovation ecosystem that encourages experimentation, celebrates failure, and values different perspectives at the business table.

The acknowledgement that work as we know it needs to change is clear – and Israel stands at the intersection between technology causing this change and business applications. The technologies discussed in this report enable the Future of Work – new ways of doing business that may seem futuristic, but at the same time, obvious. The tremendous variety of emergent technologies offers corporates a wide array of solutions, digital transformation insights, and inspiration. Israeli entrepreneurs excel at creating technological solutions to business problems, especially in the areas of machine learning and AI. The Israeli military is particularly strong in these fields, and veterans apply their knowledge in a range of business applications.

The Israeli Future of Work and HRTech startup ecosystem is young but growing. With approximately 80 companies, primarily early-stage, the space is ripe for growth. Entrepreneurs with experience in cognitive technologies are flocking to this growing sector. The startup ecosystem in Israel encourages entrepreneurs to develop technologies that address the challenges global organizations face. Today, it is not enough to excel in domains where Israel is already a clear market leader – cyber, mobility, life sciences and healthcare, fintech – but to adapt those deep technological talents and make them relevant for the Future of Work.

— · —— Foreword

Innovation Nation and the Future of Work

Dr. Maya D. Imberman, Israel Leader, Human Capital Consulting

Technological advances, demographic shifts, and consumer pulls are fundamentally changing the way people work and the way organizations design jobs and environments. These disruptive forces are creating new challenges as well as opportunities. Israel's innovative ecosystem is uniquely positioned to be a major contributor to the Future of Work globally.

Israel is well known around the world as a hub for innovation and entrepreneurship, earning the nickname 'The Startup Nation'. When thinking about the source of "the magic" in the country's bubbling ecosystem of more than 7,000 active startups, some cite a unique combination of circumstances. These include: mandatory military service working with advanced and innovative technologies acts as an incubator for technological entrepreneurs; an educated and skilled workforce with the highest percentage of engineers and scientists per capita in the world; state-run programs that drive innovation and economic growth; and over 300 multinational companies with R&D labs and innovation centers. In addition, the distinctive Israeli culture of being informal and warm, with solid networks, interconnections and a sense of community, the courage to think independently, a strong will to succeed no matter what life throws in the way, and 'Chutzpah' to challenge the status quo – all contribute to Israel's success as the Innovation Nation.

Israel's innovative ecosystem coupled with the accelerated rate of disruption are fertile ground for technological advancement related to the Future of Work. It seems that more and more Israeli entrepreneurs understand the impact technology will have on the way businesses operate and how people work, leading to an increase of innovation in the HR-Tech space. Of the estimated 7,000 active startups, several dozens are developing innovative Human Capital solutions. The world of work is evolving and has sparked a new generation of startups seeking to leverage artificial intelligence (AI), cognitive computing, analytics and machine learning to enhance Human Capital practices.

In this report, we explore the Israeli startup landscape across three dimensions of the Future of Work: work, the workforce, and the workplace.

Work: Automation and AI

Technology is key to reinventing the way businesses operate, people work, and the way that the HR function addresses increasingly complex workforce challenges. By leveraging AI, organizations will have the ability to transform Human Capital practices and the employee experience. Examples include: the ability to curate highly personalized learning and talent development experiences to individual needs; leverage predictive analytics to produce a list of available positions to increase internal mobility; rapidly fill critical positions with the most qualified candidates; utilize chatbots for guidance to new hires; as well as provide managers with people insights about engagement and performance. As an important innovator in AI and machine learning, and automation, Israel's HR-tech is poised to take a leading role in this emerging field.

The Workforce: The augmented workforce and the open talent economy

The alternative workforce is now mainstream and jobs that used to be considered supplementary to full-time work are experiencing rapid growth (e.g., freelancers, gig workers, and crowds). Furthermore, in the future, people will work alongside and interact with smart machines and robots. Therefore, it is critical that organizations become proficient at strategically managing workforce portfolios and the augmented workforce. This is a space where Israeli startups are continuing to innovate, with platforms that enable the gig and crowd economy, AI-driven talent acquisition and internal mobility, as well as robots that are revolutionizing the Future of Work.

The Workplace: Collaborative and virtual

The Future of Work will require adaptable organizations and creative collaboration, with agile teams that respond quickly to new challenges, solve problems and innovate at speed. Since the office of the future can be anywhere, technology must enable the digital workforce to be connected, engaged, empowered, creative, and productive anywhere they are. Trends point to new work environments designed to bring teams together, facilitate meaningful connections, spark conversation, trigger innovative ideas and collaborate on ways to bring them to life. Communication and collaboration tools must feel intuitive and simple with a consumer-like employee experience, creating flexible platforms that seamlessly connect a highly diverse workforce. This is another area where Israeli startups have a great deal to contribute, by creating the new generation of collaboration tools in the virtual workplace of the future.
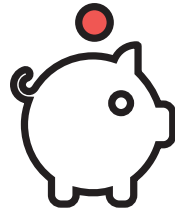
The Future
of Work Tech
industry in
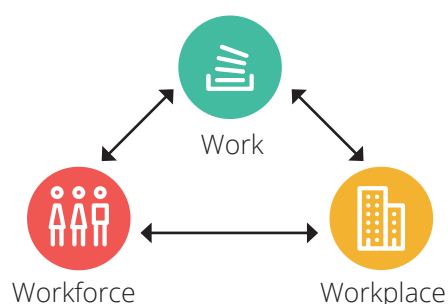Israel has
raised over
$1.2bn
in funding
(as of 2019)

The Future of Work

"The future is already here, it's just not evenly distributed" – William Gibson

The Future of Work is a big topic, encompassing trends, technologies and practices emerging as a result of new technologies and societal shifts. With concern about our future jobs and livelihoods rising with each new robotic solution and algorithm developed, Future of Work researchers and scholars attempt to make sense of the emerging picture. The truth, however, is that the Future of Work may be a bit of a misnomer – these societal shifts have been underway for decades. With their acceleration they are becoming more pressing and navigating the changing employment landscape is one of the biggest challenges businesses of all sizes face today.

There are three deeply integrated dimensions to the Future of Work: Work, Workforce, and Workplace. Work explores how the nature of work is changing to achieve new business goals, and how automation and augmentation require companies to reconsider how they do business. The Workforce pertains to who performs work as it evolves and changes, and raises questions about how organization can close skills gaps by tapping into alternative talent pools. The Workforce also encompasses the world of HR technology, an umbrella term for technologies that affect the people who do work for an organization. The last dimension of the Future of Work is Workplace: where the work can get done geographically and how organizations can maximize collaboration, productivity, and consistency.

positioned to become a technological pioneer in the field of the Future of Work, leveraging its human capital, technological expertise, and entrepreneurial culture. We prepared this report to better assess how Israel's contributions are disrupting the concept of "work" as we know it.

This report begins with an introduction to the Future of Work, presents Deloitte's thought leadership on the topic, and highlights emerging trends:

- The Automated and the Augmented Workforce
- The Open Talent Economy
- The Emergence of HRTech

The report then delves into the technologies that power the future of work: (1) Machine Learning/Deep Learning Algorithms; (2) Natural Language Processing; (3) Intelligent Automation; (4) Robotic Process Automation/Fixed Movement Robotics; (5) Analytics; (6) Marketplaces and Communities; and (7) Virtual Collaboration. We introduce each technology, highlighting relevant market figures, trends, applications and implications.

Following this technology overview, the report dives deep into the Israeli Future of Work tech landscape. The focus is 114 investor-backed Future of Work startups that are on a path to revolutionizing companies. These startups employ different technologies and come from all verticals, from healthcare and agriculture to cybersecurity and mobility. This report also highlights several startups that have made a significant impact on the landscape, or are in a unique position to do so in the near future. The report concludes with several observations of the landscape.

Unsurprisingly, the emerging universe of the Future of Work is complex and messy. Therefore, Deloitte is presenting a framework for considering the changes we observe today.

Similar to other pillars of society, the way people work is dramatically changing as society's rate of technological adoption is accelerating. As out-of-the-box technological innovations spur this rate of change, we must think about where these technologies are coming from. Israel is known as a world-class innovation ecosystem, with more technological innovations per capita than any other country in the world[1]. The country is uniquely

Trend 1:

The Automated and the Augmented Workforce

While many think of cognitive technologies as the harbingers of a future in which humans will not work, there is a growing realization that the future might not belong to either humans or machines alone, but rather to an amalgamation of the two. In a series of articles on the subject, Deloitte experts state that in order for businesses to take advantage of technological innovation, they must harness an **Augmented Workforce**, comprised of machines and humans, collectively achieving goals unattainable by either group on their own. Combining humans' creativity and ability to develop high-level goals and "what's next" type reasoning with machines' accuracy, precision, and statistical capabilities will bring forth a new era for business.

To truly create an Augmented Workforce, we must rethink the nature of work. For previous generations, work involved narrowly-defined technical assignments. However, the rise of the technologies and trends reviewed in this report mandate that businesses redefine the definition of work and the boundaries between work and goals, **and allow workers to implement creativity and higher-order problem-solving in their jobs**.

As seen from the figure presented, according to Deloitte's State of Cognitive Survey, 69% of cognitive-aware businesses indicate that they view the future workforce as augmented, either stating that many employees are likely to have new, AI-influenced positions, or will experience being augmented by cognitive technologies.

In addition to the previous finding, Deloitte experts have found that businesses are not experiencing significant layoffs or job losses due to the implementation of cognitive technologies. It is worth noting that these findings refer to the present and next three years, and do not attempt to provide a long-term forecast on job losses. Long-term consequences are hard to predict, but businesses are attempting to mitigate negative outcomes with training and reskilling employees to prepare them for the future.

A workforce in flux over the longer term: AI predicted to cause both gains and losses

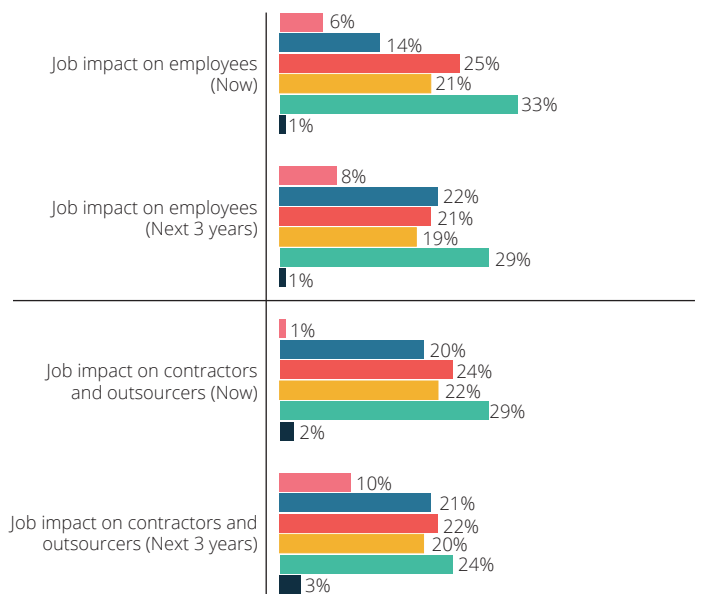|	3 yrs from now	5 yrs from now	10 yrs from now
	11%	14%	22%
	51%	36%	28%
	17%	23%	15%
	18%	23%	28%
	3%	4%	7%
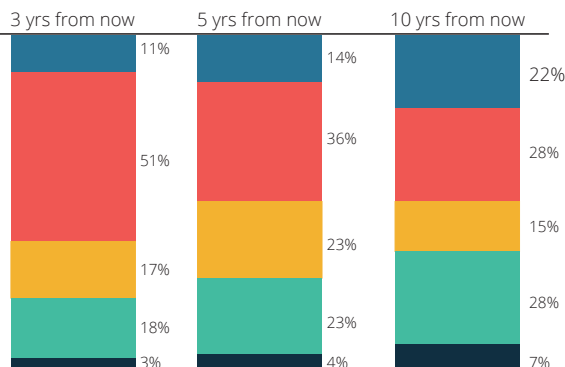
- Don't know at this point
- We are likley to see many new jobs from AI/cognitive technology
- AI/cognitive technology are not likely to have much impact on the workforce over this time
- Workers and AI/cognitive technology are likely to augment each other to produce new ways of working
- Workers are likely to be displaced in substantial numbers by AI/cognitive technology-driven automation

Apocalypse later? Minimal job losses for the near future

Job impact on employees (Now)
- 6%
- 14%
- 25%
- 21%
- 33%
- 1%

Job impact on employees (Next 3 years)
- 8%
- 22%
- 21%
- 19%
- 29%
- 1%

Job impact on contractors and outsourcers (Now)
- 1%
- 20%
- 24%
- 22%
- 29%
- 2%

Job impact on contractors and outsourcers (Next 3 years)
- 10%
- 21%
- 22%
- 20%
- 24%
- 3%

- Substantial job loss of 100 or more
- Moderate job loss of 10 to 99
- Minimal job loss of fewer than 10
- No job less
- Adding new jobs involving AI/cognitive technology
- Don't Know

*may not add to 100% due to rounding

Source: Deloitte State of Cognitice Survey, August 2017

Trend 2:

The Open Talent Economy

Today's evolving workforce is a portfolio of full-time employees, contract, and freelance talent, and, increasingly, talent with no formal ties to a company. People move from role to role and across organizational boundaries more freely than ever before. Global markets and products are driven by accelerating innovation and growing scale, and they demand talent pools and systems that can be rapidly assembled and reconfigured. The business community expects agility, scale, and skilled employees on demand. These new models look less like integrated factories and companies and more like highly orchestrated networks and ecosystems with a multitude of approaches to mobilizing, orchestrating, and engaging talent.

What the open source model did for software development, the open talent economy is doing for labor. Today's younger, connected, globally mobile people are managing their careers on their own terms. Where their parents sought job security, they prize engagement and meaning. This means that organizations must reflect upon what they have to offer talent and even what it means to "have" talent in the first place.

One of the more important trends in the emerging alternative workforce is the Gig Economy[2]. More and more frequently, people are selling their time, products, and services online. The workplace itself needs to be able to absorb agile talent, redefining not only "the office," and "the corporation," but also the configuration of the physical workspace. As discussed later, the gig economy is driven in part by the emergence of Marketplaces and Communities which significantly lower costs and barriers to entry, and use algorithmic matching engines to save freelancers and organizations the effort of manually finding each other.

Trend 3:

The Emergence of HRTech

HRTech and the Future of Work are linked, yet they are not the same. Technologies help sketch a vision of the nature of work, but they also allow businesses to digitize another important facet of their operations: HR. Through hiring and recruitment processes to retention and employee development, digital technologies unlock new possibilities and allow for better workforce management solutions. Machine and Deep Learning enable stronger and more tailored recruitment processes; NLP engines allow businesses to sift through unstructured text to understand employees' true potential; Digital marketplaces power the gig economy and allow businesses to source for on-demand talent.

The emergence of HRTech provides business executives and managers with new opportunities to find talent, and also to better understand the value of an employee to the organization. Using digital collaboration tools and AR equipment businesses can enable employees to collaborate, regardless of location. Through gamification, behavioral science and digital tools, many businesses are now better suited to increase employee retention and engagement, in order to increase revenues, productivity and workforce stability. Finally, through HRTech, businesses can better access gig and part-time talent pools through marketplaces and platforms, and hire freelancers.

The workforce is also deeply impacted by HRTech: Today, freelancers and gig-workers are more empowered than ever to use their skills for organizations through marketplaces and platforms. The implication is twofold: More employment opportunities, and more opportunities to monetize skills that were previously ignored. The job-searching process is becoming more tailored, personal and efficient, with machine-learning tools that help match applicants with potential employers. Today, with digital tools, it is easier to make employees feel visible, empowered and valued.

What does the emergence of HRTech mean for businesses? These technologies make it easier to target, find, and engage with different types of potential employees. As humanity redefines what work is and how it is done, HR and business leaders will have to adapt their workforce operations. A future with an augmented workforce will have to allow employees options to redefine and reinvent themselves more frequently, to harness their inherent human capabilities at the expense of rote and technical tasks. Hyper-personalized futures are likely to build hyper-personalized expectations from employees that businesses will need to accommodate through digital technologies and engagement platforms.

Technologies Powering the Future of Work

The Future of Work ecosystem is a diverse and wide-ranging sector made up of overlapping and interconnected companies throughout the value chain, driving and supporting a range of business implementations. Deloitte focuses on seven core technologies trends below that are shaping and enabling the Future of Work.

1. Machine Learning/Deep Learning (ML/DL)

Machine Learning refers to a host of methodologies, capacities and statistical methods that allow machines and algorithms to perform tasks without directly telling them how to do so. One advanced and popular approach is Deep Learning, which mimics the structure of the human brain and the activity of neural networks.

2. Natural Language Processing (NLP)

NLP refers to an algorithm's capacity to convert audio or unstructured text into structured, machine readable information, resulting in regular, non-coded text. NLP is an algorithm's ability to understand human language, rather than computer programming languages.

3. Intelligent Automation (IA)

Intelligent Automation combines RPA and powerful analytics to create tools can help businesses improve the effectiveness of services faster and at a lower cost than current methods. IA can assist people in the performance of non-routine tasks or even automate them.

4. Robotics

Robotics includes two subcategories: Robotic Process Automation (RPA) and Fixed Movement Robotics (FMR), with the former referring to algorithms that provide simple automation to work and business processes, and the latter indicating physical robots performing work, such as assembly-line robots in a car factory.

5. Analytics

Analytics is an umbrella term for methods to extract insights from structured or unstructured data. In the context of this report, analytics refers to a host of technologies, methodologies or techniques that allow businesses to extract intelligence and insights.

6. Marketplaces and Communities

The open talent economy offers companies the ability to tap into extensive networks of innovators, technical experts, and seasoned professionals. Marketplaces and digital communities are the platforms and tools that provide businesses and individuals with the ability to exchange information, communicate and leverage their capabilities for business opportunities.

7. Virtual Collaboration

Increasing digitization of the enterprise provides businesses with capabilities to transcend geographical constraints and enable employees to work together, regardless of time zone or location.

Future of Work Technologies

Machine learning and deep learning (ML/DL)

ML/DL algorithms permeate all aspects of our lives. From law enforcement, online dating and entertainment to healthcare, ML/DL algorithms are used everywhere. Their allure lies in their ability to detect patterns humans cannot see and their ability to adapt to new data.

In the business community, there is much excitement about ML/DL algorithms: Current mappings and lists of AI-related startups reveal hundreds of companies that employ ML/DL algorithms to solve for any number of business challenges, claiming to replace the work of humans. Other solutions intend to improve existing business and professional processes by enhancing them and providing humans with better tools to operate.

Despite their futuristic reputation, ML/DL algorithms are simply a cohort of statistical methods, tools and techniques that solve for results using training and adaptation: structured and unstructured learning, reinforced learning, backpropagation and neural nets, to name a few. Although presently they do not "learn" in the human sense of the word, these algorithms can continuously process new data to solve problems.
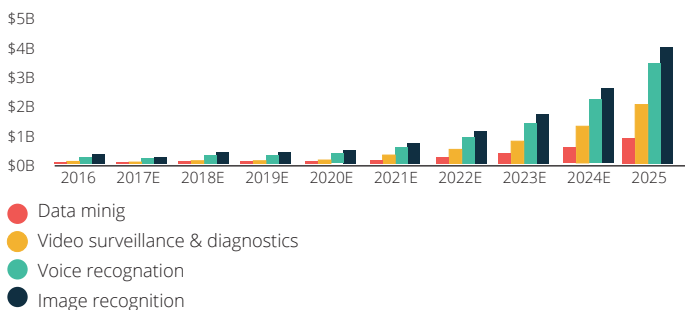
Per below, ML/DL is expected to grow in a nonlinear fashion, with an expected CAGR of 52.1%[3]. ML/DL is expected to grow in healthcare in a larger proportion than in other data-driven industries, such as Automotive and Retail.

Deep Learning

Global Market Estimates and Forecasts by End-use
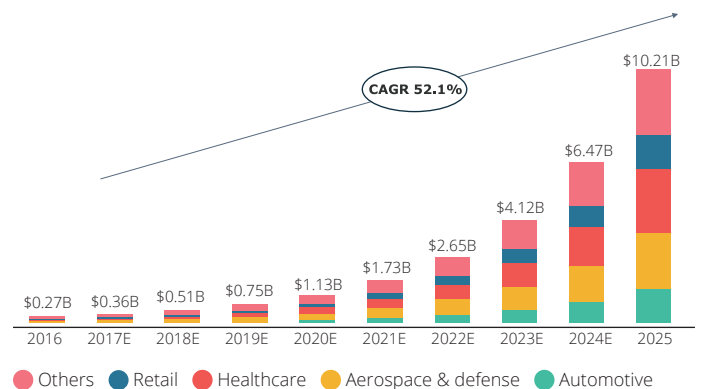
ML/DL applications abound. In healthcare, ML/DL algorithms are used to interpret medical imaging, to assist with prevention and predictions. In the industrial context, AI algorithms are commonly used in predictive maintenance and optimization, while in Cybersecurity, ML/DL algorithms automatically detect threats. Another popular area for ML/DL algorithms is consumer electronics and entertainment.

Natural Language Processing

Natural Language Processing (NLP) is a subfield in Artificial Intelligence that concerns algorithms and machines' capacity to interact with humans in their own language, as opposed to code[4].
Asking an algorithm for directions in plain English is virtually meaningless without the proper infrastructure to allow it to "understand" the request. Traditionally, it is necessary to program a computer to perform a certain task, with the appropriate computer language.

NLP generally encompasses three types of technologies:

- **Natural Language Processing:** Refers to a machine's ability to transform human language into machine-readable commands.

- **Natural Language Understanding:** Refers to a machine's ability to infer meaning from human speech and generate meaningful insights.

- **Natural Language Generation:** Refers to a machine's ability to generate output in free form human language. An example is a machine-written news article.

Researchers use NLP to transform free, unstructured text into machine-readable text to generate business insights, optimize processes and provide new services.

Market Figures

Unlike the Deep Learning market, NLP technologies are expected to experience more modest growth. While highly useful in certain contexts, NLP technologies prove to be narrower in scope than ML/DL algorithms.

While the total usage of NLP is expected to grow in the coming years, the composition of NLP methods remains almost constant. Reasons for this may be varied, but they do show that in the near future NLP will not deliver significant disruption or transformation in business.

Global Natural Language Processing Market
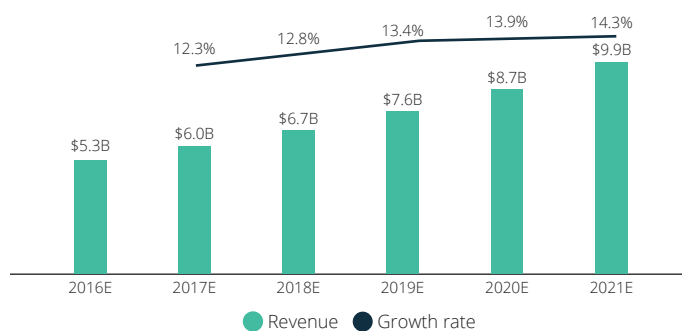
Despite the modest increase in the NLP market, Deloitte's State of Cognitive Survey reports that more than 50% of businesses interviewed deploy NLP solutions.

Global Natural Language Processing Market by Technology
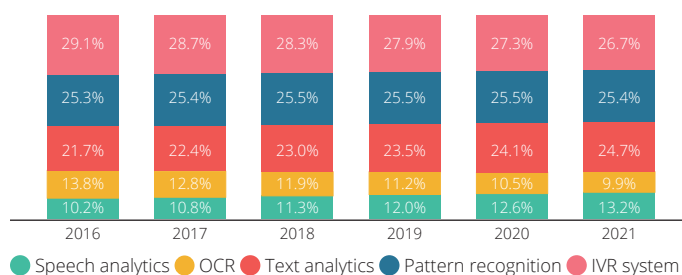
Source: Intelligent Automation Universe - Q1 2017 Market Update. SSON analytics.

Intelligent Automation (IA)

Intelligent Automation provides businesses with opportunities to reduce labor costs, increase their efficiency and divert workers' attention to higher-value and higher-order work that cannot be automated today.
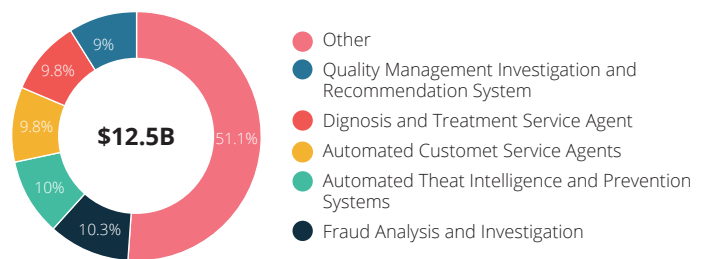
Unlike "regular" automation that can automate limited, narrow, or fixed processes, Intelligent Automation can streamline and automate increasingly complex processes and handle large amounts of data. From medicine to financial services, Intelligent Automation has proven to be a key asset for businesses.

Deloitte's research[5] recognizes three primary types of Intelligent Automation applications:

- **Deciders:** Decider systems streamline and automate decision-making capabilities.

- **Doers:** Doer systems are often physical robotic systems that are able to collaborate with other machines, and in some cases are able to collaborate with, and "learn" from human collaborators.

- **Movers:** Mover systems leverage a wide range of sensors to automate transportation.

Market Figures

Worldwide Spending on Cognitive and Artificial Intelligence System

Donut chart centered on **$12.5B** with segments:
- 51.1% — Other
- 10.3% — Fraud Analysis and Investigation
- 10% — Automated Theat Intelligence and Prevention Systems
- 9.8% — Automated Custometer Service Agents
- 9.8% — Dignosis and Treatment Service Agent
- 9% — Quality Management Investigation and Recommendation System

Legend:
- Other
- Quality Management Investigation and Recommendation System
- Dignosis and Treatment Service Agent
- Automated Custometer Service Agents
- Automated Theat Intelligence and Prevention Systems
- Fraud Analysis and Investigation

The fragmented nature of Intelligent Automation spending presents many opportunities for vendors and businesses alike.

Trends, Applications, and Implications

By marrying cognitive technologies with automation, intelligent automation allows businesses to reduce reliance on humans when it comes to rote yet complicated tasks. Unlike RPA, Intelligent Automation enables businesses to automate processes that are delicate, complex and that today, require the attention of humans.

5 David Schatsky and Vikram Mahidhar, Intelligent automation: A new era of innovation, https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/intelligent-automation-a-new-era-of-innovation.html
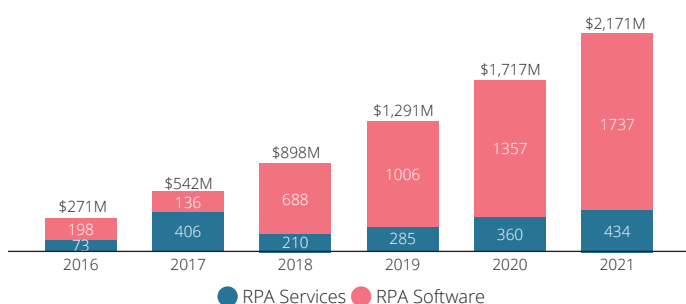
Robotics

In this report, Robotics refers to two distinct but related technologies: Robotic Process Automation (RPA) and Fixed-Movement Robotics (FMR).

Market Figures

The figures below represent two distinct market trends that are likely to have a significant impact on businesses: The first is the rapid growth of the services sector in RPA, and the second is dominance of RPA in the financial sector. The RPA market exhibits a relatively unusual dominance in customer services, suggesting that the market is likely to be characterized by vendors providing services to operate businesses' automation processes, instead of relying on an internal workforce.

Worldwide Robotic Process Automation (RPA) Market 2016-2021

Source: The Market Outlook for Robotic Process Automation. HfS Research, 2017.

Global Cognitive Robotic Process Automation Market by Industry
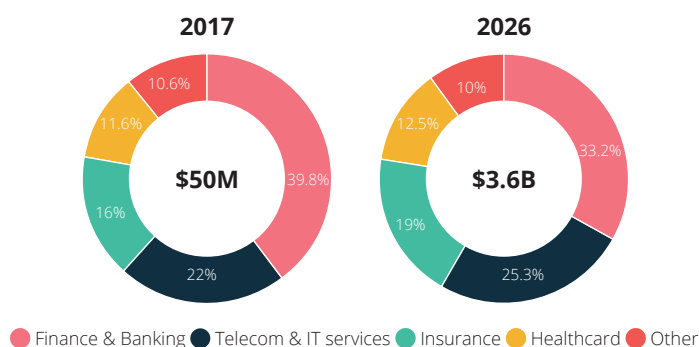
Source: Global Cognitive Robotic Process Automation Market, Analysis & Forecast 2017-2026. BIS research.

Trends, Applications, and Implications

The common categorization of RPA and FMR often segments robotics to traditional industries: industrial robotics, retail, commerce, defense, etc. Often, these categories refer to "traditional" robots in use for years on end. With the rise of AI, ML/DL and developments in digital technologies, however, it is possible that a new type of categorization is necessary to capture the essence of the benefits of next-generation robotics.

A Deloitte publication suggests additional, emerging categories[6]:

- **Collaborative robots (cobots):** Robots designed to collaborate with humans and augment their abilities, rather than replace them

- **Commercial & Service Robots:** Robots placed outside of the industrial context and are designed to perform certain tasks

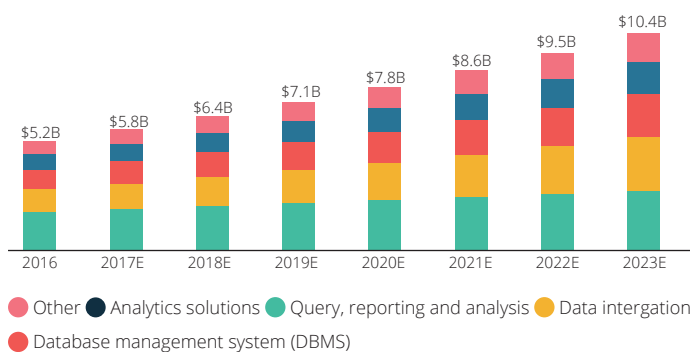These new robotics designations hold major implications for how humans and machines work together in the future.

6 https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/next-generation-robots-implications-for-business.html

Analytics

Analytics is an umbrella concept that encompasses many technologies, methodologies and fields. The concept has become so widespread and overarching that it resists a simple and clear definition. Still, Analytics are an important part of any serious discussion on the state of current and future technologies.

Despite the ambiguity, Analytics, in the business and technology context, concerns the collection, processing and manipulation of data for the discovery and generation of useful business intelligence (BI) or patterns, through the use of a variety of disciplines and tools.

Financial Analytics Market by Type

- ● Other ● Analytics solutions ● Query, reporting and analysis ● Data intergation
- ● Database management system (DBMS)

Source: Global Opportunity Analysis and Industry Forecast, 2017-2023 Financial Analytics Market. Allied Market Research, 2017.

Trends, Applications, and Implications

As analytics tools continue to mature, companies are shifting from using analysis to prescribe business decisions to predict business outcomes.

Predictive Analytics is an umbrella name given to a host of methods that include ML/DL algorithms, data mining techniques and statistical models that allow businesses to leverage large sets of data in order to create predictions, rather than descriptions of the current state.

A snapshot of analytics across industries:

- **Insurance:** An increasing number of companies are using analytics to predict risk. Additionally, companies use predictive models for predicting fraud potential, marketing and advising, triage and for other core business functions.

- **Industrial:** Predictive analytics play a significant role in factories and industrial facilities' ability to plan and execute maintenance, avoid critical shutdown or malfunctions. Predictive Analytics tools are able to review machine logs and "understand" when a machine is likely to stop working correctly, thus allowing facilities to fix machines before they break down.

- **Healthcare:** Today, providers are increasingly utilizing tools that enable them to predict a patient's behavior or state when infused with large clinical data sets.

Marketplaces and Communities

In the digital age, Marketplaces and Communities have taken unique shapes, often as online platforms, and have a direct effect on the future of work, primarily by enabling the Gig Economy.
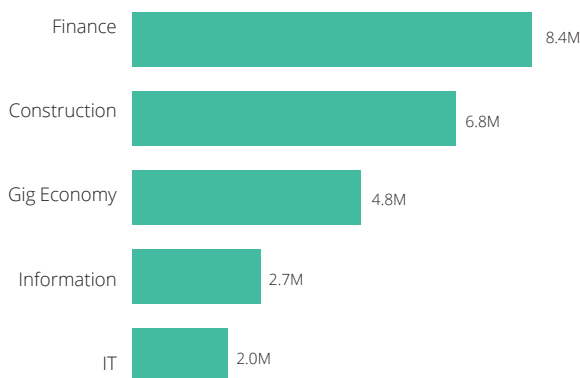
Marketplaces and Communities are technological tools that provide businesses and individuals with what Deloitte refers to as the "Power of Pull," namely the "ability to find and access people and resources when and as needed"[7]. Primarily operated with the help of sophisticated matching algorithms, many companies offer Marketplaces and Communities, allowing businesses to access talent and expertise inexpensively and on demand.

They also allow individuals to provide freelance work to a variety of businesses without the need to commit to a single employer. Recent research has shown that off-balance-sheet workforce accounts for 94% of the increase in the workforce in the US[8].

Market Figures

The gig economy is growing, expected to almost double from 4.8M workers in 2016 to 9.2M in 2019.

Number of employees by Sector (US)

Size of US Gig Economy
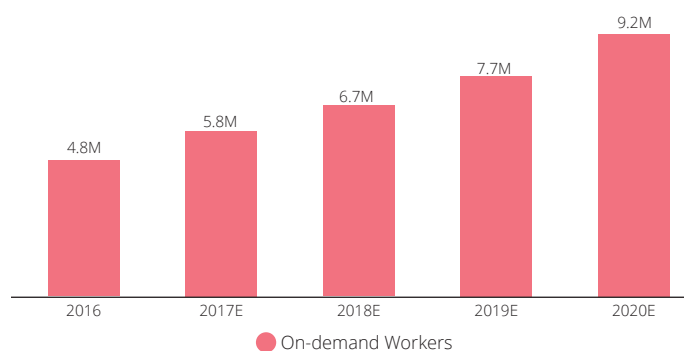
Source: Molla, R. The gig economy workforce will double in four years. Recode, 2017.

The implications of Marketplaces and Communities on the workforce are significant. These businesses are a key enabler of the gig economy, and enable the formation of a hybrid workforce. They also will require different management strategies, combining different functions across organizations, from Innovation and IT to HR and core-function managements, in order for businesses to truly capture the value that the gig economy has to offer.

7 John Hagel, Jeff Schwartz, Josh Bersin, " Navigating the future of work: Can we point business, workers, and social institutions in the same direction? "https://www2.deloitte.com/insights/us/en/deloitte-review/issue-21/navigating-new-forms-of-work.html
8 Jeff Schwartz, Kelly Monahan, Heather Stockton, "Forces of Change", https://www2.deloitte.com/insights/us/en/focus/technology-and-the-future-of-work/overview.html

Virtual Collaboration

As companies rethink their business models, they must also rethink their geographical and digital footprint, as there is a spectrum of options for how the workplace today can look. Previously, all the employees of a given organization were co-located – people shared the same physical space and held in-person meetings. Today, many companies enable work via both physical and virtual interactions, where most participants are in-person with a combination of remote and distributed workforces.

Increasingly, employees are more mobile, using a combination of technologies to enable virtual interactions. Many companies also leverage the power of a fully distributed workforce and enable virtual interactions for remote teams by using virtual reality (VR) and augmented reality (AR) technologies to enable work.

Virtual Workplace	Hybrid Workplace	Physical Workplace
Supports interactions between remote individuals enabled by technology	**Supports interactions between collocated and remote individuals enabled by the design of the physical work space and technology**	**Supports interactions between individuals in the same location enabled by the design of the physical work space and technology**
• Enables global teams to work seamlessly across time zones • Increased geographical availability of resources and diverse talent • Reduced overhead costs	• Increased geographical availability of resources and diverse talent • Cost efficacy of labor • Flexible work arrangements may lead to reduced job-stress levels	• Increased opportunity for "accidental collisions" and serendipitous interactions • Potential for increase in collaboration and innovation • Enables deeper human connection / trust building

Virtual collaboration enables on- and off- balance sheet employees and freelancers to do their work in a more flexible, autonomous environment. When employers embrace tools that allow employees to be more flexible, they see a noticeable uptick in employee interest - 68% of millennials report increased attraction to the organization when it offers on demand workplaces[9]. 89% of companies report better retention simply by offering flexible work options[10].

Non-traditional workplaces are already a reality, and virtual collaboration tools make it easier for people to do what they need to do.

9 AfterCollege, a career network for college students and recent grads, https://remote.co/10-stats-about-remote-work/
10 https://journal.thriveglobal.com/4-stats-that-show-how-flexible-work-options-contribute-to-mental-well-being-19690005f9bf

Israel's Future of Work Industry: a Preliminary Analysis

Israeli society has a few key differentiators that make it a hotbed of startup activity. Israeli culture is very casual and open; people are encouraging but also direct and honest, making the atmosphere very conducive to innovation. The Israeli government creates substantial incentives for entrepreneurs and subsidies for global organizations coming to Israel for investment opportunities. Waves of immigrants bring different perspectives, skills, and opinions, making Israel a hub of creativity.

However, the true foundation for the technological innovation that flourishes here is based in the Israeli military. Mandatory service based on the existential threat Israel faces creates opportunities for young adults to take risks and take charge. In order to stay a step ahead, the Israeli military does no only rely on traditional forces and soldiers, but in recent decades has pivoted its resources towards cyber and intelligence technologies. When young civilians leave the army, they use the technological innovation skills they learned for business applications.

FoW Tech is a rapidly growing new industry in the Israeli high-tech ecosystem, and has raised over $1.2B to date. Enthusiasm for AI technology and related applications is fueling investment with 30 seed-round and 40 A-Round investments from 2017 to 2018.

FoW Tech leverages Israel's depth and energy in cognitive technologies, NLP, Artificial Intelligence and prediction. The report outlines FoW companies and solutions following a mapping of the Israeli startup ecosystem. Deloitte's findings include companies with the following attributes:

· Product based on at least one of the seven technologies reviewed

· Raised at least $500,000 in funding

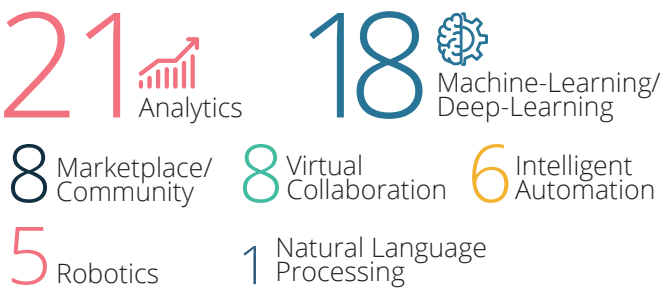· Financial Investor or Strategic Investor backing

Findings: Analytics, Machine Learning dominate the Israeli Future of Work Landscape

One key finding from the market scan is the dominance of Analytics companies, with ML/DL companies coming in second – combined, they account for over 50 percent of the FoW technologies coming out of Israel. Unsurprisingly, these technological domains dominate the landscape given Israel's primacy in these fields. This indicates that Israeli technologies will enable transformation change.
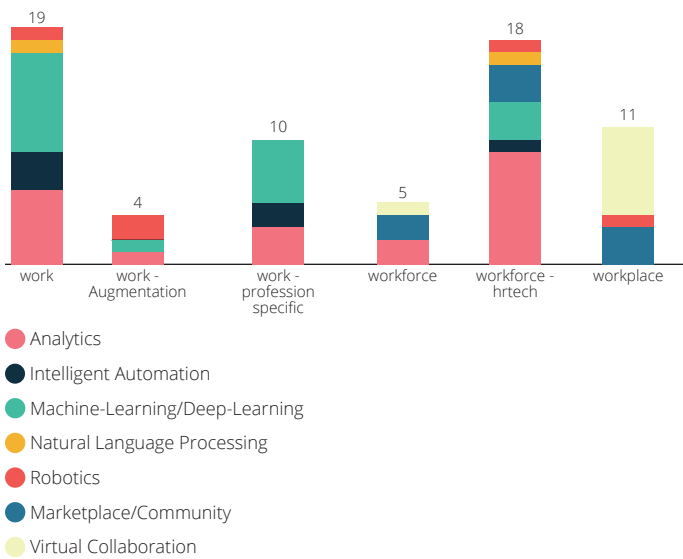
Companies by categories

Donut chart titled "$1.2bn" with segments: 31%, 27%, 2%, 7%, 12%, 9%, 12%

- Analytics
- Machine Learning / Deep Learning
- Natural Language Processing
- Robotics
- Marketplace / Community
- Intelligent Automation
- Virtual Collaboration
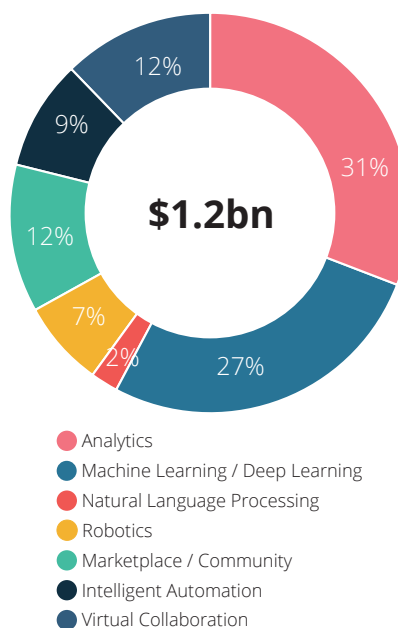
Number of companies by technology Category:

21 Analytics

18 Machine-Learning/ Deep-Learning

8 Marketplace/ Community

8 Virtual Collaboration

6 Intelligent Automation

5 Robotics

1 Natural Language Processing

What technologies enable which pillars of the Future of Work

- ● Analytics
- ● Intelligent Automation
- ● Machine-Learning/Deep-Learning
- ● Natural Language Processing
- ● Robotics
- ● Marketplace/Community
- ● Virtual Collaboration

Funding

To date, Israeli startups have raised over $1.2B. Nearly half of the funds raised in the FoW space were raised by ML/DL companies, which aligns with the previous finding regarding the share of ML/DL technologies as a percentage of companies active in the ecosystem.

Companies of Funding Stage
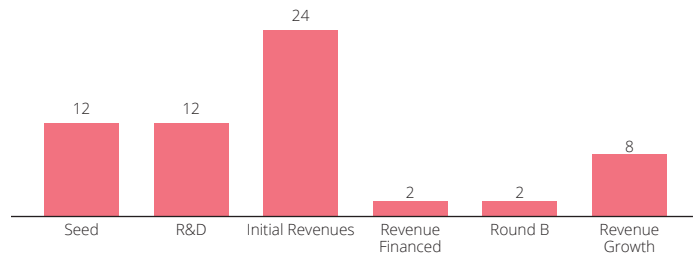
Funding Amounts by FoW enabling technology

$1.2bn

- ● Work
- ● Work Augmentation
- ● Work - profession specific
- ● Workforce
- ● Workforce - HRtech
- ● Workplace
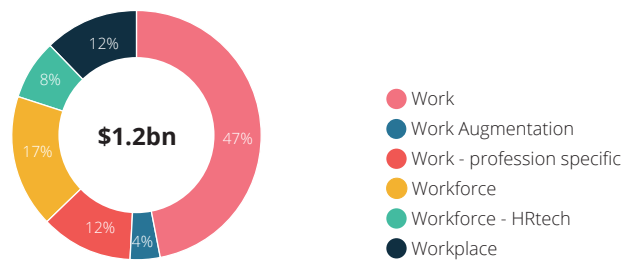
It is interesting to note that Intelligent Automation and ML/DL technologies make up 50% of the solutions that power Future of Work solutions coming out of Israel. This makes sense, given Israel's primacy in these fields and experience in these types of technology, regardless of business application.

Market Maturity

The Israeli FoW tech ecosystem is relatively young, with more than 35% in the early stages of building a company (i.e., in the R&D phase or receiving seed-round funding). An additional 35% of the companies are in the process of raising initial revenues. There are relatively few companies in this industry (approximately 25%) in the Revenue Financed stage.
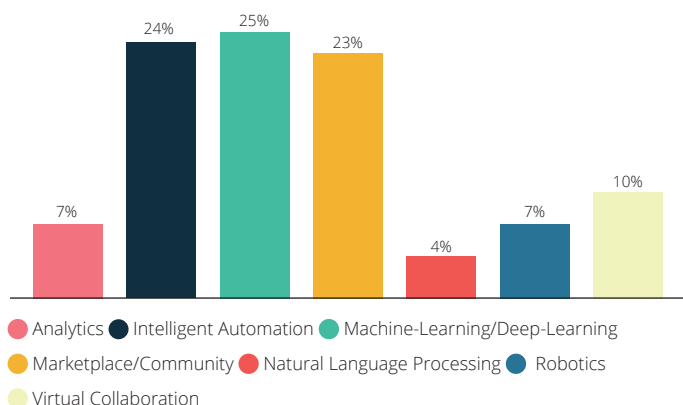
Funding by Round

Seed $19.5M · R&D $9.6M · Initial Revenues $428M · Revenue Financed $3.7M · Round B $43M · Revenue Growth $634M
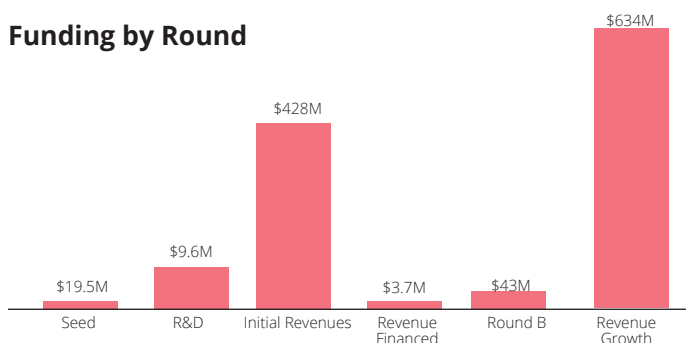
Employees

The number of employees is consistent with previous findings, showing an industry that is still evolving and in early-growth stage, with the vast majority of companies employing fewer than 50 people.

Additionally, the data shows a disposition towards ML/DL and Analytics solutions. Once again, Intelligent Automation stands out, with more employees than Analytics, indicating Intelligent Automation companies require a larger employee pool than Analytics companies.

Over two thirds of the Future of Work Tech workforce is focused on "work" technologies, and only one tenth of the employees in this field are focused on the workplace.

Breakdown of employees by FoW technology

Analytics 7% · Intelligent Automation 24% · Machine-Learning/Deep-Learning 25% · Marketplace/Community 23% · Natural Language Processing 4% · Robotics 7% · Virtual Collaboration 10%

Companies by Size

1-10: 20 · 11-50: 28 · 51-200: 17 · 201+: 2

Deloitte.
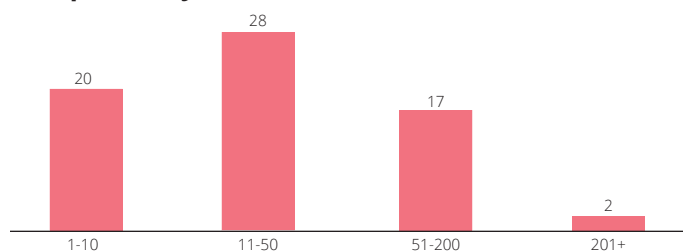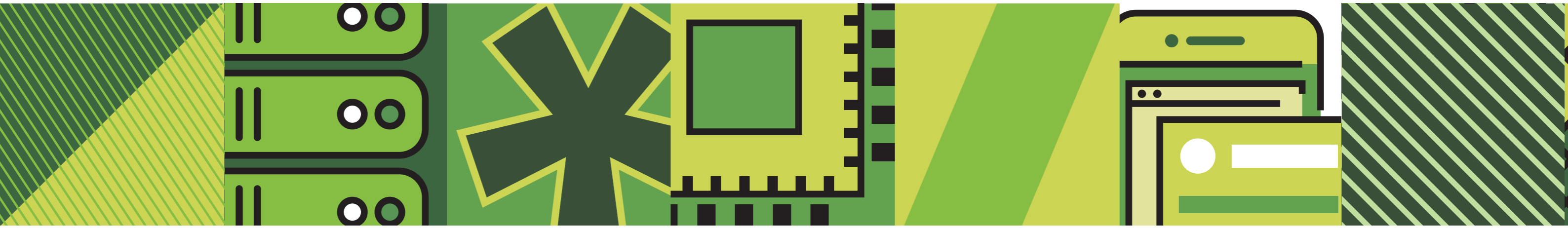
Future of Work Tech

A preliminary mapping of selected startups in the Israeli ecosystem,

May 2019

Work

KRYON · Anodot · tonkean · GONG
SPARKBEYOND · FDNA · TOMOBOX · ayehu
AUGURY · k · walkme · audioburst
binah.ai · mobijobi · POWTOON
Knowmail · HyperSpace · game:ffective
Manto AI · TARANIS · verbit

Profession Specific

deepINSTINCT · cortica · aidoc
codota · loom Systems · WISESHELF Transforming Retail shelves to IoT
{LawGeex} · maxQ Artificial Intelligence · ROOKOUT

Augmentation

COMMONSENSE ROBOTICS · VOCALZOOM Making your voice heard · prospera
intuition robotics · AIROBOTICS

Workforce

fiverr · Ubeya · BEYONDVERBAL · buildup
exceed.ai · IntelliGym Think Faster. Play Better.

HRTech

woo.io · tomigo · TALENYA · APPLICAT
pando logic · empirical · EMERJ
redmatch Smart Recruitment · gloat · EZSHIFT Scheduling Software
Joonko · bob · Nexcv
ActiView · otipo schedule · INGENI
intervyo Predict Greatness · quali.fit · Orderboard.ai

Workplace

Jolt · Compedia · SPACING · reach.
monday.com · comeet. · buildup
DBmaestro DevOps for Database
365 · GOARC Making Safety Irresistible · OfficeTrack

Analytics

21

startups have
raised more than

$150M

Startup Spotlight:

hibob

bob is a people management platform that helps fast-growing companies bring out the best in their employees. Founded in 2015, Hibob understands that a new generation of workforce is creating the workplace of the future, and with that evolution comes a demand for a new way to manage people. bob enables fast-growing companies, who put their employees first, to attract, excite, retain and develop their most valuable assets, people. With offices in New York, London and Tel Aviv, Hibob helps hundreds of businesses around the world grow their people.

What people are saying:

"One of the more innovative new core HCM platforms is a product called bob, from a fast-growing company called Hibob. bob is designed a management platform first and HR platform second, so its entire design is focused on what information managers, employees, and executives need."
- Josh Bersin, Thought Leader

Highlight: Analytics Startup in Israel

Analytics

Anodot

Founded: 2014
Website: www.anodot.com

Anodot uses AI analytics to help illuminate businesses' blind spots in order to prevent companies from missing revenue leaks or brand-damaging incidents.

Anodot's automated machine-learning algorithms continuously analyze its customers' business data, delivering real-time alerts whenever an incident occurs.

Intelligent Automation   Analytics

{LawGeex}

LawGeex

Founded: 2004
Website: www.lawgeex.com

LawGeex is transforming legal operations by automating the review and approval of everyday business contracts.

The artificial intelligence solution helps legal teams focus on the big picture without getting lost in the paperwork. LawGeex improves consistency, operational efficiency and gets business moving faster.

Analytics

BeyondVerbal

Founded: 2012
Website: www.beyondverbal.com

Since its launch in 2012, Beyond Verbal has been using Voice and AI to revolutionize Emotions Understanding, Wellbeing and Healthcare. The only input needed is the human voice, making this technology non-intrusive, passive and cost effective.

By combining the company's patented technology with its proprietary machine learning-based algorithms and AI, Beyond Verbal is focusing on emotions understanding and discovering vocal biomarkers

Machine Learning   **Analytics**

Loom Systems

Founded: 2015
Website: www.loomsystems.com

Loom Systems' AI solution, Loom Systems Ops, monitors IT environments, reporting problems and predicting potential issues, while integrating with all existing tools.

Loom requires no configuration before or during product use, and the platform continuously optimizes based on the environment's behavior.

Highlight: Machine Learning and Deep Learning Startups in Israel

Machine Learning

Augury

Founded: 2012
Website: www.augury.com

Augury is bringing predictive maintenance technology to new markets. The technology combines two key shifts in the industry: artificial intelligence and the Internet of Things.

The intersection of these trends allows Augury to provide machines with a mechanical nervous system and the awareness to optimize their own health, thereby accelerating human productivity and safety.

Machine Learning

SparkBeyond

Founded: 2013
Website: www.sparkbeyond.com

SparkBeyond has built an automated, AI-powered research engine designed to leverage and intelligently augment data on the internet in order to discover complex patterns within them.

These patterns then become powerful tools for explaining, predicting, and optimizing outcomes.

Machine
Learning

Kang Health

Founded: 2016
Website: www.kanghealth.ai

K Health developed K, an AI personal health assistant powered by millions of real medical charts, notes, and labs.

K shows patients how doctors have diagnosed and treated other people with similar cases. K can address a wide variety of symptoms and primary-care outpatient conditions.

Machine
Learning

binah.ai

Binah.ai

Founded: 2016
Website: www.binah.ai

Binah.ai provides business actionable answers to critical business challenges with its unique approach to augmented data analytics: a virtual data science platform combining signal processing and machine learning that accelerates the path from data to insights delivering "best in class" models in terms of accuracy, performance and stability.

Highlight: Robotics Startups in Israel

Robotics

Commonsense Robotics

Founded: 2015
Website: www.cs-robotics.com

CommonSense Robotics build networks of automated Micro-Fulfillment Centers in dense urban areas that combine the speed of local delivery with the efficiencies and scale of robotic fulfillment.

CommonSense's proprietary robotic and AI technology, together with a pay-as-you-go service proposition, enable our retail partners to profitably deliver to their online customers within one hour and scale their operations as their business grow

By utilizing a novel approach to this last-mile challenge and state-of-the-art robotics and AI, CommonSense Robotics allows its clients to offer true on-demand services, dramatically reduce their operational costs and benefit from superior operational scalability.

Analytics   Robotics

Airobotics

Founded: 2014
Website: www.airobotics.co.il

Airobotics has developed a pilotless drone solution, the first of its kind in the global market.

Airobotics provides an end-to-end, fully automatic solution for collecting aerial data and gaining invaluable insights. The industrial grade platform is available on-site and on-demand, enabling industrial facilities to access premium aerial data in a faster, safer, more efficient way.

Highlight: Natural Language Processing Startups in Israel

Natural Language Processing

Machine Learning

Natural Language Processing
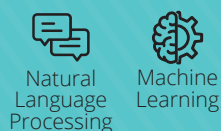
Cortica

Founded: 2007
Website: www.cortica.com

Cortica is developing autonomous artificial intelligence (AI) technology designed to enable machines to think.

By leveraging proprietary brain research to create unsupervised AI, Cortica has developed an effective computer-vision system.

Gong

Founded: 2015
Website: www.gong.io

Gong uses Natural Language Processing to analyze conversations in order to help sales teams understand the things that are going right – and wrong – on their sales calls.

Gong analyzes conversations from audio sources and web-conferencing and links the results to CRM systems. Real-life listening, pitching, probing, positioning, and closing skills are reviewed and refined.

Highlight: Marketplace and Community Startups in Israel

marketplace/
community

Fiverr

Founded: 2010
Website: http://www.fiverr.com

Fiverr is a community of creative individuals that offers a safe and fun place to easily hire talented people from around the world to do customized work at an affordable price.

Millions of sellers from over 200 countries offer more than 2.8 million services on Fiverr, adding thousands of new ones each day, from the fun and casual to essential business services, at prices starting at $5.

marketplace/
community

Gloat

Founded: 2014
Website: www.gloat.com

Gloat is a social recruitment platform designed to change the way people plan their career paths. Gloat analyzes each user's profile and matches them with the best opportunities at the right time

Gloat's machine-learning algorithms compare the user's work history to millions of career paths and then offers the best opportunities for their next career move.

Startup Spotlight:

monday.com

Launched in 2014 with offices in Tel Aviv and New York, monday.com is a team management tool that is simple and flexible enough to meet the needs of just two people working together to vastly complex workplace operations of thousands, spanning different departments and time zones. The product's intuitive design, uniquely flexibly structure, and exceptional scalability has driven widespread appeal across 200 business verticals, from tech-savvy to non-tech savvy alike. One of the platform's key offerings is creating an environment of transparency in all workplaces. Active paying customers include Carlsberg Group, Discovery Channel, McDonalds, NBC Universal, and WeWork, among over 70,000 teams. In the last year, the company tripled its revenue into the tens of millions of dollars, tripled its customer base, and more than doubled overall headcount to 250.

monday.com helps teams around the world seamlessly manage their core business activities, including all processes and workflows, by leveraging an intuitive and visual platform. A prime example of this can be seen in how WeWork utilizes monday.com. At first, an R&D team (30 users) started using the platform to improve communication between different development groups, then spread to the entire technology team (200 users) to use for iteration planning, and then to HR as well (350 users) to help hiring managers from different departments collaborate. The WeWork management team then started using the platform for all of their workplace needs and upgraded to a plan for 750 users. The platform has been essential to increasing productivity, creating an environment of transparency, and empowering employees now that WeWork is now in the final stages of negotiation for enterprise-wide adoption.
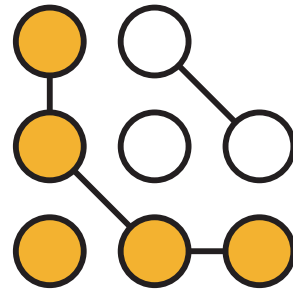
Virtual Collaboration Startups

8

startups have raised more than

$115M

Additional Deloitte Resources on the Future of Work

1. Global Human Capital Trends 2019: Leading the Social Enterprise: Reinvent with a Human Focus; <u>2019 Report</u>

2. What is the Future of Work: Redesigning work, workforces, and workplaces, Deloitte Insights, April 2019, <u>Article</u>

3. How can health systems and health plans prepare and transform their workforce? Deloitte Insights, March 2019, <u>Article</u>

4. Reframing the future of work: initiatives promise lots of noise and activity, but to what end? Sloan Management Review (SMR), February 2019, <u>Article</u>

5. How humans and machines can work together. Interview with MIT professor Thomas Malone on human-computer collective intelligence and the future of work, Deloitte Review, January 2019 <u>Article</u>

6. No time to retire: redesigning work for our aging workforce, Deloitte Insights, December 2018, <u>Article</u>

7. Creating meaning and structure for independent work: a conversation, with Amy Wrzesniewski, professor at Yale School of Management, on places, routines, people, and purpose, Deloitte Insights, December 2018, <u>Article</u>

8. The untethered workforce-- Empowering the 100 percent mobile worker, Deloitte Insights, December 2018, <u>Article</u>

9. Decoding Millennials in the Gig Economy, Deloitte Insights, May 2018, <u>Article</u>

10. Global Human Capital Trends 2018: The Rise of the Social Enterprise. <u>2018 Report</u>

11. How Automation, AI and the Gig Economy Will Revolutionize Work Design: MIT Sloan Review, Winter 2018, <u>SMR Reprint</u>

12. Navigating the Future of Work. Collection of ten articles exploring the implementation challenges of re-imagining work, workforce, and workplace redesign including automation, cognitive technologies and AI and alternative talent models. <u>July 2017 Report</u>

Future of Work Tech Emerging Landscape:

Preliminary Listing, Spring 2019

Company Name	Startup Category	Founded	Website
Actiview	Analytics	2010	www.actiview.io
ActiView develops a mixed-reality assessment platform that leverages spatial data, deep-learning methods, and advanced neuroscience research to offer deep understanding of candidates and predict their success			
Aidoc	Machine-Learning/Deep-Learning	2016	www.aidoc.com
Aidoc is creating a novel system for medical imaging. The company aims to harness the recent advances in computer vision and machine learning to improve medical image diagnosis. Aidoc's solution aims to optimize the workflow and help the physician focus on the diagnosis. To truly innovate in this field, Aidoc is developing advanced deep learning technology tailored to the medical domain.			
Airobotics	Robotics	2014	www.airobotics.co.il
Airobotics has developed a pilotless drone solution, the first of its kind in the global market. Airobotics provides an end-to-end, fully automatic solution for collecting aerial data and gaining invaluable insights. The industrial grade platform is available on-site and on-demand, enabling industrial facilities to access premium aerial data in a faster, safer, more efficient way.			
Anodot	Analytics	2014	www.anodot.com
Anodot is an Artificial Intelligence-powered analytics solution that discovers business incidents in real time.			
Applicat	Analytics	2009	www.applicat.com
Applicat's Hormiga is a field service management solution that aims to boost productivity and impact the bottom-line results of any service organization. By leveraging practical workforce knowledge and equipping field workers with mobile tools, Hormiga is designed to increase employee efficiency and save time and resources			
Applied Cognitive Engineering	Virtual Collaboration	2003	www.intelligym.com
ACE develops software based "brain-gyms" under the brand IntelliGym. These training tools significantly improve the performance of trainees in a specific profession or task. The company's first applications are for the US sports market, starting with training programs for basketball players.			
AudioBurst	Machine-Learning/Deep-Learning	2015	www.audioburst.com
With the mission of organizing the world's audio content, Audioburst is building the world's largest growing library. Every day, our AI platform listens to, understands, segments and indexes millions of minutes of audio information from top radio stations and podcasts. Powered by advanced NLP technology and a proprietary AI platform that indexes audio segments into searchable bursts in real-time, Audioburst is introducing an entirely new way for consumers and businesses to interact with live or recorded audio content across platforms and devices.			
Augury	Machine-Learning/Deep-Learning	2012	www.augury.com
Augury is bringing predictive maintenance technology to new markets. The technology combines two key shifts in the industry: artificial intelligence and the Internet of Things. The intersection of these trends allows Augury to provide machines with a mechanical nervous system and the awareness to optimize their own health, thereby accelerating human productivity and safety.			

Company Name	Startup Category	Founded	Website
Ayehu Software Technologies	Intelligent Automation	2007	www.ayehu.com

Ayehu capitalizes on one of the most fundamental trends driving the evolution of the IT industry in 2017 and beyond: IT Process Automation. Named by Gartner as a Cool Vendor in 2016, Ayehu's IT Automation and Orchestration Powered by AI platform is a force multiplier for IT and security operations, helping Enterprises and MSPs all over the world save time on manual, repetitive tasks, reduce risks and maintain greater control over IT infrastructure – whether on-premise or in the cloud. The company has offices in New York, California, and Israel.

Beyond Verbal	Analytics	2012	www.beyondverbal.com

Since its launch in 2012, Beyond Verbal has been using Voice and AI to revolutionize Emotions Understanding, Wellbeing and Healthcare. The only input needed is the human voice, making this technology non-intrusive, passive and cost effective. Beyond Verbal's technology has been developed based on ongoing research into the science of emotions that started in 1995. By combining the company's patented technology with its proprietary machine learning-based algorithms and AI, Beyond Verbal is focusing on emotions understanding and discovering vocal biomarkers. During the past 22 years, the company has been able to hone its technology through multiple internal tests and independent external validations. Over time, Beyond Verbal has collected more than 3 million emotion-tagged voices in more than 40 languages, and secured their technology with multiple granted patents.

Binah.ai	Machine-Learning/Deep-Learning	2016	www.binah.ai

Binah.ai provides business actionable answers to critical business challenges with its unique approach to augmented data analytics: a virtual data science platform combining signal processing and machine learning that accelerates the path from data to insights delivering "best in class" models in terms of accuracy, performance and stability.

Buildup	Natural Language Processing	2013	www.buildup.co

Buildup Technologies Inc provides a comprehensive set of tools to help users manage construction projects on site using a smartphone, tablet, or via the web. The system aims to improve efficiency in order to provide significant cost savings

Codota	Machine-Learning/Deep-Learning	2013	www.codota.com

Codota is an AI pair programmer that helps developers create better software, faster by providing insights learned from all the code in the world. Codota learns from millions of code examples available on public and private repositories.

Comeet	Virtual Collaboration	2012	www.comeet.co

Comeet is a collaborative recruiting platform that customers describe as "the iPhone of recruiting" and "life-changing" with "off-the-charts ease of use." High-growth companies choose Comeet for its consumer-like user experience, which makes it easy for recruiters and hiring teams to onboard and use, as well as for its automated workflows and role specific features for hiring managers, interviewers, coordinators and executives. Comeet is favored by companies of up to 5000 employees and has more than doubled its customer base over the last year.

CommonSense Robotics	Robotics	2015	www.cs-robotics.com

CommonSense Robotics is building an on-demand supply-chain that allows retailers to offer sustainable, 1-hour delivery service to their online customers. Its Micro-Fulfillment-Center is an urban, automated fulfillment solution that combines the benefits of local distribution with the economics of automated fulfillment, and is re-defining the way goods are fulfilled and delivered within cities.

Compedia	Virtual Collaboration	1998	www.compedia.net

Compedia is a world leader in the development of advanced technologies, platforms and products for corporate training, performance support and education. Compedia has over 100 highly skilled employees, many of whom are experts in their field. Thus, Compedia can offer expertise in visual computing, augmented reality, virtual reality and advanced systems, as well as instructional design and UX. Compedia has a proven track record. We have the technologies, experience and state-of-the-art patent-pending technologies that have enabled us to bring disruptive and cost-effective products to market. Compedia offers products in the corporate and industrial markets that are highly innovative and are configured to perform on all platforms and with all devices, whether PC or mobile.

Cortica	Machine-Learning/Deep-Learning	2007	www.cortica.com

Cortica is developing autonomous artificial intelligence (AI) technology designed to enable machines to think. By leveraging proprietary brain research to create unsupervised AI, Cortica has developed an effective computer-vision system

Company Name	Startup Category	Founded	Website
DBmaestro	Virtual Collaboration	2008	www.dbmaestro.com

DBmaestro introduces DevOps and automation best practices to databases for the enterprise. The DBmaestro approach dramatically simplifies, accelerates, and improves release processes while modernizing database development via release pipelines long enjoyed elsewhere in the industry. Using MedyMech products, you will accelerate the overall application release cycle by 10 times, increase development and DBA team productivity by 15%, and see a significant reduction in application downtime due to database-related errors.
MedyMatch provides both database source control and release automation capabilities across the board for developers, DBAs, security, and operations in multi-database enterprise environments.

Deep Instinct	Machine-Learning/Deep-Learning	2015	www.deepinstinct.com

Deep Instinct is the first company to apply deep learning to cybersecurity. Leveraging deep learning's predictive capabilities, Deep Instinct's on-device, proactive solution protects against zero-day threats and APT attacks with unmatched accuracy. Deep Instinct provides comprehensive defense that is designed to protect against the most evasive unknown malware in real-time, across an organization's endpoints, servers, and mobile devices. Deep learning's capabilities of identifying malware from any data source results in comprehensive protection on any device, any platform, and operating system.

Eloops	Virtual Collaboration	2016	www.365x.io

Eloops is a branded social engagement platform for companies to engage, communicate and connect with and between their employees in one place. Employees use the app to connect, share moments, get information, stay in the loop and participate in events, challenges and unique activities between branches and coworkers. It is an employee engagement app that works but does not feel like work.

Emerj	Analytics	2015	www.emerj.work

Emerj is a scalable solution which not only helps the organizations fight attrition - but supercharges their employees with skills and opportunities. The white-label web app allows employees from all levels to ask questions. The Emerj algorithm then matches them with the most relevant and skilled coworkers.

Empirical Hire	Machine-Learning/Deep-Learning	2017	www.empiricalhire.com

Empirical Hire provides an engine which utilizes machine-learning algorithms to analyze vast quantities of data to screen and select Sales and Service employees who will be most productive and stay longest, thus optimizing the hiring process and dramatically decreasing hiring costs.

Exceed.ai	Machine-Learning/Deep-Learning	2016	www.exceed.ai

Exceed.ai is a virtual assistant for sales and marketing teams. Exceed.ai automates many of the customer interactions currently performed manually by marketing representatives. Exceed.ai uses artificial intelligence, machine learning, and conversational technology to generate qualified opportunities through dynamic lead capture, qualification, and nurturing.

Ezshift	Analytics	2005	wwww.ezshift.co.il

EZShift offers real-time employee scheduling software for SMBs. Its software automatically places employees in the work schedule with almost no need for human intervention. The assignment of employees to shifts is done using a sophisticated algorithm that considers many variables in order to create an optimal work arrangement for the organization

FDNA	Machine-Learning/Deep-Learning	2010	www.fdna.com

FDNA develops AI technologies and SaaS platforms used by thousands of clinical, research, and lab sites globally in the clinical genomics space. Using advanced deep learning, FDNA's next-generation phenotyping technologies capture, structure, and analyze complex human physiological data to produce actionable genomic insights

Fiverr	Marketplace/Community	2010	www.fiverr.com

Fiverr is an online community that offers a safe and fun place to easily hire people from around the world to do customized work. Millions of sellers from over 200 countries offer more than 2.8 million services on Fiverr, adding thousands of new ones each day, from the fun and casual to essential business services, at prices starting at $5.

Gameffective	Analytics	2012	www.gameffective.com

GamEffective is a next-generation gamification company focused on the use of rich graphical narratives to drive skillful change in organizations. Its solution is used by leading global organizations to improve sales, customer support, and training

Company Name	Startup Category	Founded	Website
Gloat	Marketplace/Community	2014	www.workey.co

Gloat is an AI-based career development platform matching users with personalized career opportunities in real time while they remain anonymous.
Gloat provides smart recommendations on what an individual's next career steps could be by using advanced AI to analyze unique and complex career histories, while simultaneously comparing the user's information to the career paths of millions of others. This knowledge provides users the opportunity to make informed data-driven decisions and even pursue prospects previously unimagined.
The anonymity provided by Gloat also facilitates a safe place for the passive seekers to easily discover and explore their options. Based on the results and recommendations generated, passive talent as well as active talent can effectively assess offers before the companies even know their names. This in turn, significantly widens and enhances the pool of potential employees. Anonymity further mitigates against decisions based on gender, age or ethnic bias, tackling a key social problem that remains to this day.

Company Name	Startup Category	Founded	Website
Goarc	Marketplace/Community	2015	www.go-arc.com

GOARC is a digital safety company that has developed a technology for industrial organizations, designed to reduce work-related accidents, save lives, reduce costs, and empower safety compliance. The company's system leverages mobile platforms and algorithms, collecting data from various sources (e.g. enterprise resource planning, internet of things, operation systems, etc.) to analyze, predict, and provide alerts about potential work accidents before they happen

Company Name	Startup Category	Founded	Website
Gong.io	Natural Language Processing	2015	www.gong.io

Gong.io is a Conversation Intelligence platform for B2B sales. Gong.io enables sales teams to improve their calls and demos and gives sales leaders insights into what their best salespeople are doing differently. Gong.io's patented technology records, transcribes, and analyzes sales calls using AI, helping the sales organization understand what works and what doesn't.

Company Name	Startup Category	Founded	Website
Hibob	Analytics	2015	www.hibob.com

Hi Bob is a cloud-based platform designed to help human resources departments turn employee data into actionable information by identifying the various cultures within a business. Hi Bob streamlines administration and improves employees' experiences with a smart mobile app, personalized benefits store, and onboarding and survey tools

Company Name	Startup Category	Founded	Website
Hyperspace	Analytics	2014	www.hyperspace.app

HyperSpace is developing a decentralized, blockchain-enabled computation platform for applications that includes a decentralized social network owned and controlled by users. With HyperSpace, users can connect directly to one another via secure cryptographic channels that prevent governments and marketing agencies from eavesdropping without consent

Company Name	Startup Category	Founded	Website
ICV	Analytics	2016	www.geticv.com

ICV seeks to reinvent recruiting with the use of deep technologies such as artificial intelligence, machine learning, and natural language processing. The company's solutions are designed for use by high-growth early-stage companies to some of the largest companies in the world.

Company Name	Startup Category	Founded	Website
Ingeni	Machine-Learning/Deep-Learning	2017	www.ingeni.co.il/en

NGENI is a global network of data science-powered game rooms that store soft skill data, enabling organizations to assess and hire employees. The process is also suitable for finding talent within the company, organizational development, career consulting, and for investors who want to assess teams during due diligence procedures.

Company Name	Startup Category	Founded	Website
Intervyo	Intelligent Automation	2014	www.intervyo.com

Intervyo is an AI start-up that specializes in human predictive analytics. The company has created an automated interviewing solution that screens candidates and predicts their suitability for the job.

Company Name	Startup Category	Founded	Website
Intuition Robotics	Machine-Learning/Deep-Learning	2016	www.intuitionrobotics.com

Intuition Robotics creates digital companion technology for seniors. The company's cognitive AI agent platform, Q, understands the context of the environment through sensor fusion and makes goal-based cognitive decisions using proprietary algorithms that proactively and intuitively anticipate and engage users with multi-modal expressions

Company Name	Startup Category	Founded	Website
Jolt	Marketplace/Community	2015	www.jolt.us

Jolt is a curated marketplace that allows companies to book talks by industry professionals for their employees on a regular basis. Given the high rate of innovation, companies are realizing that they have to invest in not only hiring the best talent, but also keeping it up to speed with the market. Despite spending $130B a year on training, most companies believe that their employees are not evolving as fast as their industry.

Company Name	Startup Category	Founded	Website
Joonko	Analytics	2016	www.joonko.co
	Mishandling diversity causes substantial business damage. Joonko (Techstars '16, Salesforce Incubator '17) is a real-time diversity and inclusion coach that helps employees, managers, and executive decision makers, to identify and overcome their unconscious bias, as it occurs. We make it easier for companies to ensure a more diverse recruiting pipeline, and that all employees experience an inclusive workplace, free of harassment, while providing them with an equal chance to succeed.		
Kang Health	Machine-Learning/Deep-Learning	2016	www.kanghealth.ai
	K Health developed K, an AI personal health assistant powered by millions of real medical charts, notes, and labs. K shows patients how doctors have diagnosed and treated other people with similar cases. K can address a wide variety of symptoms and primary-care outpatient conditions.		
Knowmail	Machine-Learning/Deep-Learning	2014	www.knowmail.me
	Knowmail has developed a personalized artificial intelligence solution to help individuals communicate and collaborate more effectively at work. Knowmail is specifically designed to help professionals efficiently manage email overload, prioritize work objectives, and make sure they are always on top of their game while optimizing their work/life balance.		
Kryon Systems	Robotics	2008	www.kryonsystems.com
	Kryon Systems delivers innovative, intelligent Robotic Process Automation (RPA) solutions enabling digital transformation for enterprises. Using patented visual and machine learning technologies, Kryon Systems, flagship platform, Leo, allows companies to automate business processes quickly and easily, for immediate productivity gains, near zero error rates, reduced costs and significant ROI results. Leo's unique 2-in-1 platform delivers both unattended automation (RPA) to offload rules-based processes to a virtual workforce, as well as attended desktop automation (performance support) to assist a company's human workforce.		
LawGeex	Intelligent Automation	2004	www.lawgeex.com
	LawGeex is transforming legal operations by automating the review and approval of everyday business contracts. The artificial intelligence solution helps legal teams focus on the big picture without getting lost in the paperwork. The easy to use platform analyzes incoming contracts and reviews their contents using the legal team's pre-defined checklists or LawGeex best practice. Contracts meeting the criteria are automatically approved and relevant parties notified. Unapproved contracts are escalated to the legal team with an interactive report that pinpoints any unacceptable or missing clauses requiring further action. LawGeex improves consistency, operational efficiency and gets business moving faster.		
Loom Systems	Intelligent Automation	2015	www.loomsystems.com
	Loom Systems enables enterprises to achieve IT Operational Excellence by utilizing its advanced AIOPs log analysis solution, providning them the ability to predict and prevent IT issues before they affect the customer experience.		
Manto.AI	Analytics	2018	www.manto-ai.com
	Manto AI helps enterprises understand and retain their best employees. Using a combination of AI algorithms, research-based domain expertise, and a human analyst, Manto predicts which employees might resign, when, and why, in order to enable managers and human resources to take effective action.		
MaxQ AI	Analytics	2013	www. maxq.ai
	MedyMatch utilizes advanced cognitive analytics and artificial intelligence (deep learning and computer vision) to deliver real-time decision support tools to improve clinical outcomes in acute medical scenarios. Its initial product focus is in stoke and head trauma (TBI) and has integrated its technology into GE CT, Samsung and IBM Watson platforms. The foundation of clinical discovery and value creation lies in the deep clinical understanding of how to utilize the right data (electronic medical record, medical imaging, and genomic data). The MedyMatch team of artificial intelligence, machine learning, deep learning and algorithmic experts along with its medical and science advisory boards are achieving breakthroughs in standards of cost and care		
Mobijobi	Analytics	2011	www.mobijobi.com
	Mobijobi is an end-to-end mobile-workforce management solution tailored for small businesses. The company offers a simple solution to manage field service operations, with features including personalized customer portals, lead management, task dispatching, real-time team-member tracking, and performance reports		

| Company Name	Startup Category	Founded	Website
Monday.com	Virtual Collaboration	2012	www.monday.com
	monday.com is a workplace tool that transforms the way teams work together. The platform is an intuitive solution for teams of all types, including from non-technology sectors, ranging from two freelancers collaborating on a project to large teams working across a Fortune 500 company. The tool helps teams build a culture of transparency, empowering everyone to achieve more and be happier at work.		
NexCV	Machine-Learning/Deep-Learning	2017	www.nexcv.com
	NexCV has been developing an automatic creation and management of paid recruitment campaigns on all social networks. Passive applicants can only be reached on social channels, but it must be done using precise targeting and messaging. NexCV's Machine Learning platform targets applicants while providing constant analytics and insights on the recruitment proces		
Officecore	Robotics	2002	www.officecore.com
	OfficeCore provides cellular location-based software solutions for managing and tracking mobile employees and vehicle fleets. The company's solution cooperates with other software providers as needed to facilitate the interface between its solution and the client's information systems, such as ERP and CRM systems		
Orderboard.ai	Big Data, AI		www.orderboard.ai
OrderBoard.ai	Making HR better and bring many years of experience in HR, HR Technology, AI and Data Science		
Otipo	Analytics	2006	www.otipo.co.il
	Otipo provides management expertise with an emphasis on human resources operations management, organizational consulting, and the development of advanced software solutions. Otipo delivers real-time monitoring and analysis of scheduling data and employee satisfaction to improve company morale, increase staff retention, and ultimately reduce costs. Its Human Dimension algorithm enables managers to continuously monitor employee satisfaction, social connectedness, and overall organizational health		
Pandologic	Marketplace/Community	2007	www.realmatch.com
	PandoLogic enables employers to source quality applicants quickly and efficiently through the use of big data, artificial intelligence, and proprietary campaign algorithms that fully automate and optimize the job advertising process, from job classification and targeted distribution to budget allocation and dynamic bidding across diverse job categories. PandoLogic's talent acquisition solutions connect publishers, employers, job board operators, and job seekers across a shared talent network using an advanced programmatic platform.		
Papaya Global	Marketplace/Community	2016	www.papayaglobal.com
	Papaya Global provides fast and flexible workforce solutions for companies and start-ups looking to grow their teams and expand globally. Papaya offers a simple solution that eliminates compliance risks, creates higher returns, and maximizes efficiency and value for global organizations.		
PhraseTech	Analytics	2013	www.phrasetech.com
	PhraseTech develops a technological platform that utilizes artificial intelligence, natural language processing and advanced mathematical algorithms in order to bring the wisdom of the crowd to the end user. Through aggregation and analysis of opinions from across the web, the PhraseTech platform generates valuable knowledge that provides answers to currently unanswerable questions.		
Powtoon	Intelligent Automation	2011	www.powtoon.com
	PowToon provides intuitive, user-friendly presentation software that allows a person with no technical or design skills to create engaging, professional-quality animated presentations. The company aims to establish a new presentation category called "powtoon," a combination between a presentation and an animated cartoon, as the industry standard for animated presentations.		
Prospera	Analytics	2014	www.prospera.ag
	Prospera fuses machine-learning algorithms and botany to reinvent agricultural data usage and help farmers grow crops more efficiently		
Quali.Fit	Intelligent Automation	2016	quali.fit
	Quali.fit is a white-label AI assistant for recruiting that streamlines the process of understanding each candidate, client, and job opening by conducting interactions with each party autonomously. Quali.fit can automate 90% of recruiters' daily activities and identify high-quality matches. It learns from each of its interactions to gather deep layers of understanding, draw insightful conclusions, and respond accordingly.		

Company Name	Startup Category	Founded	Website
Reach	Virtual Collaboration	2015	www.seegnature.com
	Reach is a next-generation customer engagement platform which allows companies to conduct transactional meetings online with their clients, eliminating the need for a physical encounter. The platform empowers companies to wrap up transactions - paperwork or ID verification processes - instantly and remotely in a real-time session between a company agent and a client as well as in a customer self-service mode, using any device.		
RedMatch	Robotics	2000	www.redmatch.com
	Redmatch delivers technologically advanced and robust SaaS solutions that maximize recruiting efficiency and place HR practitioners in the best position to make the strongest hiring and employee management decisions – consistently and efficiently.		
Rookout	Machine-Learning/Deep-Learning	2017	www.rookout.com
	Rookout is a rapid production debugging solution that collects data on demand from live code and directs it immediately to any destination, such as alerting and monitoring tools. With Rookout's real-time instrumentation technology, a company can tackle bugs and issues without the need to code, re-deploy, or restart the application		
Siteaware	Analytics	2015	www.siteaware.com
	SiteAware provides the industry leading Digital Replica solutions for the Construction Industry, improving the Efficiency and Quality of the on-site execution. SiteAware helps Construction Companies, Owners and Real-Estate Developers to meet project budget, timelines, quality and safety. By digitizing job sites into actionable 3D data with situation-aware drones, SiteAware enhances Project Monitoring and Site Management capabilities		
Spacing	Marketplace/Community	2017	www.spacing.co.il
	Spacing is a marketplace for available co-working and subletted office spaces that gives tenants a smart and simple tool for comparing and receiving information about co-working spaces in Israel		
SparkBeyond	Machine-Learning/Deep-Learning	2013	www.sparkbeyond.com
	SparkBeyond has built an automated, AI-powered research engine designed to leverage and intelligently augment data on the internet in order to discover complex patterns within them. These patterns then become powerful tools for explaining, predicting, and optimizing outcomes		
Talenya	Machine-Learning/Deep-Learning	2017	www.talenya.com
	Talenya Uses technology to help companies fill jobs that they are unable to fill themselves. Talenya is disrupting the recruitment industry through a combination of technology & domain experts that help employers fill roles in less than 20 days.		
Taranis	Machine-Learning/Deep-Learning	2014	www.taranis.ag
	Taranis offers a precision intelligence platform for agriculture. Its solution enables farmers to monitor their fields, make informed decisions, and take appropriate action, helping them to increase their yields and cut costs.		
Tomigo	Marketplace/Community	2011	www.tomigo.com
	Tomigo is an innovative social recruiting platform designed for today's social media culture. Its goal is to help companies discover new talent among their own employees' social network connections. Using a fusion of advanced technology and social media expertise, Tomigo makes it possible for companies to leverage their employees' wide base of connections to easily and successfully hire the talent they need. Tomigo's solution a good fit for a broad range of companies, dedicated to assisting them in their search for the ideal applicants, and in contributing to their ongoing success.		
Tomobox	Analytics	2014	www.tomobox.co
	Tomobox is a customer engagement platform with AI-powered analytics and smart bots. By delivering the right ads to the right people at the right time, Tomobox generates premium-value revenue for its users. The company delivers the highest-probability targeted results through the use of its proprietary machine-learning algorithms for topic detection and modeling. Through the analysis of chats occurring in multiple languages and on a wide range of topics, such as travel, mobile gaming, and sports, Tomobox is able to accurately match people with their interests to deliver the most highly targeted ads and recommendations directly to users.		

| Company Name	Startup Category	Founded	Website
Tonkean	Intelligent Automation	2015	www.tonkean.com
	Tonkean is the next generation business dashboard. By marrying data with human input and using A.I. to smarty and proactively follow up on important matters, Tonkean makes sure nothing ever fall through the cracks.		
Ubeya	Analytics	20112014	www.ubeya.com
	Ubeya is an all-in-one platform providing an advanced solution for scheduling and management for event-based businesses. The company's software uses web and mobile to automate scheduling, communication, and work-force management for industries that manage hourly staff on an event-based need. Ubeya seeks to reinvent the way companies communicate with their staff, enabling practicality, efficiency, and reliability to managers and their event teams		
Verbit	Natural Language Processing	2016	www.verbit.ai
	Verbit uses artificial and human intelligence to provide a smart transcription and captioning solution. Built on adaptive algorithms, Verbit's technology quickly generates detailed speech-to-text files with over 99% accuracy.		
VocalZoom	Robotics	2010	www.vocalzoom.com
	Vocalzoom delivers HMC (Human Machine Communication) sensors, for reliable and accurate Voice Authentication and Voice Control, in real life noisy environments. VocalZoom allows for voice-based virtual assistants to work accurately in the car, Authenticate the passenger's identity and unleash new opportunities to monetize data and services, personalized services, and make payments by voice.		
WalkMe	Intelligent Automation	2011	www.walkme.com
	WalkMe is the pioneer of the Digital Adoption Platform (DAP) - an enterprise-class guidance, engagement insights and automation platform. As the digital revolution transforms the workplace and customer preferences, WalkMe's holistic approach simplifies both enterprise systems for the overwhelmed employee, and customer-facing sites or mobile apps. WalkMe DAP enables the creation of interactive on-screen sequences that guide and engage users throughout any digital experience. Powered by AI and machine learning, WalkMe's context-intelligent algorithm streamlines digital adoption internally and externally, ensuring that the right users receive the right information exactly at the moment of need. With WalkMe, employees are more efficient and productive, customers stay loyal and engaged, and businesses enjoy the full value of their digital assets.		
WiseShelf	Analytics	2016	www.wiseshelf.com
	WiseShelf offers a platform that provides real-time insights into retail shelves, enabling traditional stores to participate in the internet of things (IoT). The company has developed a multi-sensor appliance that detects the number of products on each shelf and then sends the data to a patented, cloud-based algorithm.		
Woo	Analytics	2014	www.woo.io
	Woo.io connects candidates who are discreetly exploring new employment opportunities to companies with the right job for them. Its machine learning technology matches criteria from both employers and candidates, resulting in an efficient process and high success rates from introduction to interview		

Authors

Vered Epner
Senior Consultant
Catalyst| Tel Aviv
(formerly ITT)
Deloitte Israel

vepner@deloitte.co.il
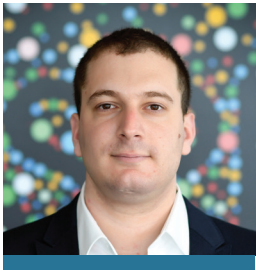
Arod Balissa
Senior Consultant
Catalyst| Tel Aviv
(formerly ITT)
Deloitte Israel

abalissa@deloitte.co.il

Contributors:
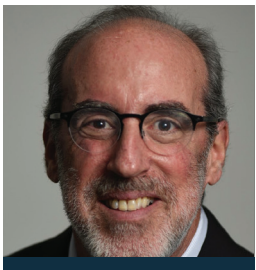
Jeff Schwartz
US Leader
Future of Work
US Leader
Catalyst | Tel Aviv
(formerly ITT)

jeffschwartz@deloitte.com

Amit Harel
Israel Leader
Catalyst | Tel Aviv
(formerly ITT)
Deloitte Israel

aharel@deloitte.co.il

Maya Imberman
Israel Leader
Human Capital Consulting
Deloitte Israel

mimberman@deloitte.co.il

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2019 Deloitte Global Human Capital Trends

Deloitte, 2019

Superminds: How humans and machines can work together

Jim Guszcza, Jeff Schwartz, January 2019

Decoding millennials in the gig economy
Six trends to watch in alternative work

Kelly Monahan, Dr. Tiffany Schleeter, Jeff Schwartz, May 2018

What is the future of work?

Jeff Schwartz, Steve Hatfield, Robin Jones, and Siri Anderson, April 2019
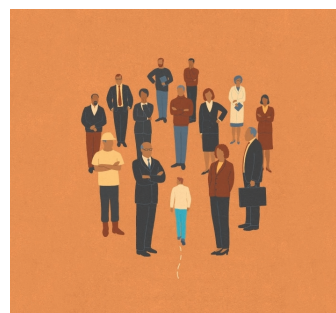
No time to retire
Redesigning work for our aging workforce

Jeff Schwartz, Steve Hatfield, Kelly Monahan, Siri Anderson, December 2018
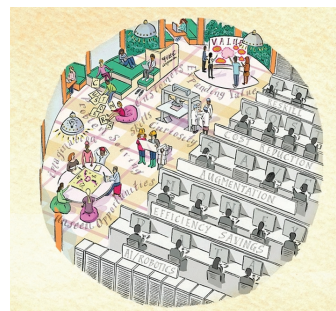
What is work?

John Hagel, Maggie Wooll, January 2019

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