OurCrowd

Innovation Insider

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Dawn of a New World

How pandemic-related innovation will change everything

Cover Illustration: Hila Noam

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The Future Came Early

Traditionally, corporations that invest in innovation during crisis outperform peers by up to 30% during recovery, a recent McKinsey report reveals. Ironically, the same report also reveals that current corporate commitment to innovation has been decreasing as CEOs prioritize their core business in the wake of Covid-19.

A brief look into the history books reveals another truth: The average life expectancy of corporations on the S&P 500 has been decreasing sharply — from 60 years in the 1950s to less than 20 today. The main reason is tech disruption, or the introduction of a new technology to market that renders all previous products obsolete.

But while tech disruption is nothing new — it's been with us since the industrial revolution — the pace of technology adoption has increased sharply over the years. It took Americans about 50 years to adopt electricity in their homes, but only 10 to adopt the smartphone.

Then came Covid-19, which has accelerated tech adoption like never before. Amazon is hiring 100,000 new employees to meet record demand for e-commerce. Online grocery shopping has more than tripled in March compared to last August, with a record number of senior citizens buying for the first time. In the British Parliament, MPs can vote online for the first time in 700 years. In NYC you can get married via Zoom. And in Israel, you can file a complaint with the police from the convenience of your home. In just two months, the world has seen a digital transformation worthy of two years, according to Microsoft's CEO Satya Nadella. And history shows us that there's no going back: Tech adoption has never reversed.

But wait, there's more. The previous three recessions (2008, 2000-1, and 1991) were followed by spikes of automation. The 2020 recession has already broken every record in terms of unemployment — and something else radical has changed.

For the first time, we have technologies that can replace humans not just in manual labor, but also in cognitive skills. Machine learning, deep learning, and other forms of artificial intelligence will dominate our workforce in years to come, forever changing our economy. It is an exciting time to work in tech, but also a time for governments to narrow the digital divide in the workforce.

The years ahead will be critical for every corporation. Those who will emerge on the other side stronger are not necessarily the ones with the most cash in the bank, but those who adapt fastest to a world that is radically different from the one we left behind in 2019. It's never been more important to invest in innovation, and the best time for it is now.

Dan Fishel
VP Business Development

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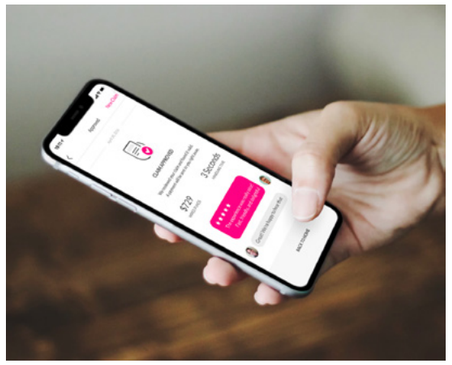
OurCrowd Portfolio News



↑Lemonade files for IPO and seeks to raise $100 million. The company plans to list on the New York Stock Exchange under the ticker "LMND".

→Freightos partners with Alibaba to launch Alibaba.com Freight, a new product that enables US merchants to compare rates, arrange shipments, and track ocean and air shipping in real time.

→UPnRIDE gets FDA approval and will soon be available in the US. The company developed a standing wheelchair, a smart and robotic mobility device that provides full functionality in standing and sitting.

→Hailo partners with Foxconn and Socionext to build BOXiedge, an edge device for AI inference and video analytics. The device is expected to deliver "market-leading" energy efficiency for AI inference, benefiting applications like industrial internet of things, smart cities, and smart medical.

→BOL Pharma announces first cannabis export from Israel to Europe, with a shipment destined for centers that specialize in the treatment of children with epilepsy and autism in the United Kingdom.

→Ossio gets FDA 510(k) market clearance for OSSIOfiber Hammertoe Fixation System, which allows for the alignment and fixation of bone fractures, arthrodesis, osteotomies and bone grafts.

→Edgybees wins its largest contact to date from the US Air Force. The contract will see Edgybees' innovative computer vision technology integrated with the US Air Force's systems to bolster situational awareness in complex operational scenarios.

→Airobotics received world's first approval to fly automated, commercial drones above a major metropolis and flies above Singapore. The company's solution is being used to complement Singapore's police operations by collecting real-time aerial data.

→Trusona patents world's first anti-replay technology for passwordless authentication. The company's patented solution plays an integral role in its dynamic authentication, using the unique nature of a user's actions to accurately secure the identity behind every digital interaction.

→Rewire develops into a neobank for migrants in Europe. The fintech company will offer customised accounts focussed on the specific needs of migrants and the introduction of a new line of banking products that will serve the customers in the host country as well as the country of origin.

→Perception Point announces its newest product: Advanced Salesforce Security. The cybersecurity firm preventing file, URL and social engineering based attacks launches advanced protection for Salesforce, which will be added to its multi-channel threat prevention offering.

↑Scopio Labs launches the ScopioVet, an automated, high resolution imaging and decision support solution for the Veterinary market. The new ScopioVet Digital Cytology System is already installed in dozens of clinics and is now available commercially throughout the United States and Canada.

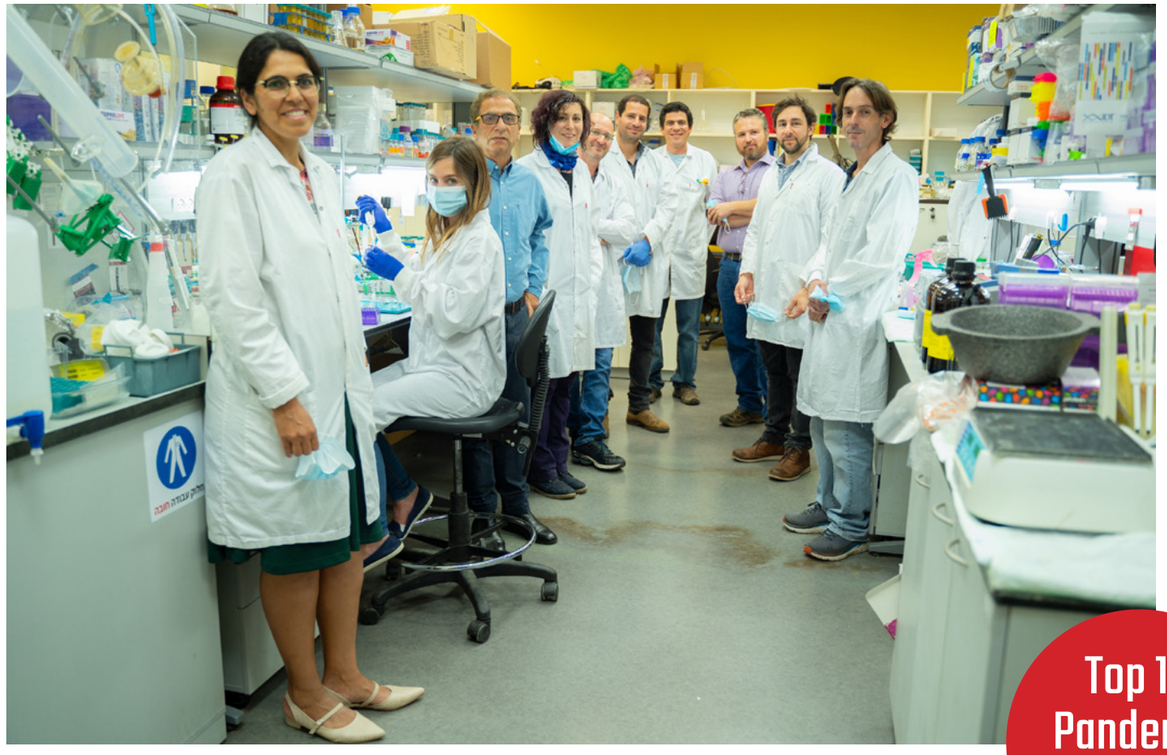
→C2A Security announced Development Partnership with AUTOSAR, a global automotive platform consortium of OEM and Tier 1 companies including BMW, Bosch, Continental and Toyota. C2A's entry marks the first and only time an Israeli startup has partnered with the alliance.

↖Superpedestrian acquires Zangster's scooters and launches LINK, expanding into shared e-scooter operations. LINK allows riders to rent Superpedestrian's e-scooters using a smartphone.

→prooV teams up with AWS Service Catalog. Enterprises can now leverage prooV to build a custom proof-of-concept platform that evaluates and implements solutions at scale, directly to their AWS Service Catalog, while remaining secure and compliant.

OurCrowd to Raise $100 Million to Fight Pandemic

The Covid-19 pandemic thrust tech centerstage as the world scrambles to stay safe. From automation to vaccines, OurCrowd has pledged to help find solutions - fast.



OurCrowd has launched a $100 million Innovation Pandemic Fund for investment in urgent technological solutions for the medical, business, educational, and social needs triggered by global pandemics and other health emergencies.

"The rapid spread of the coronavirus has validated our vision of a connected digital world poised to solve any crisis through global communication and rapid response," said OurCrowd CEO Jon Medved. "To ensure that we get the world back on track, there is now an urgent need for innovation. Technology can help us overcome many of the problems resulting from the crisis. It's time for tech to move fast and fix things."

The pandemic has accelerated the pace of technology adoption across many domains. Microsoft's CEO Satya Nadella recently stated: "We saw two years of digital transformation in two months." The FDA has approved new digital diagnostic tools that will remain in use once the current pandemic has settled. Appstore downloads of remote working apps have soared. 75% of IT professionals reported changes to FinTech firms' cybersecurity programs to manage the transition to working from home. Salesforce predicts the use of AI-driven customer service and chatbots will more than double.

OurCrowd's Pandemic Innovation Fund will focus on the following investment sectors:

- ***Prevention & Containment*** - Vaccines, Testing, Personal protection, etc.
- ***Treatment & Healing*** - Therapeutics, Diagnostics, Remote monitoring, Digital health, etc.
- ***Continuity & Disruption Mitigation*** - Remote working, Distance learning, Robotic Process Automation, Home exercise, Cybersecurity, etc.

The Fund will both invest in new startups and select relevant companies already included in OurCrowd's existing portfolio.

MigVax Races Toward a Vaccine

Creating a vaccine for Covid-19 is currently one of the world's most urgent problems. *MigVax*, established by *MIGAL*, an internationally recognized research institute located in Israel's Northern Galilee, might be one step closer to finding a solution.
The team at MigVax says it is uniquely qualified to carry out this work based on its successful development of a vaccine against Infectious Bronchitis Virus, an avian (poultry) coronavirus with high similarity to today's human Covid-19 that uses the same infection mechanism. Given the similarity, and following required genetic adjustments, they say the same vaccination concepts should apply. OurCrowd is investing $12 million in MigVax to help the team accelerate its efforts to develop a vaccine, which would be orally administered and would not include the actual virus, making it safe for immune-suppressed patients.

Alon Roitman

Top 10 Pandemic Tech Trends

Stav Erez
Partner, Labs/02

Jonathan Wiesen, MD
Medical Investment Team

1. Wave Goodbye to the Office

The future of work and remote technologies has moved center stage. Companies like Zoom soared with their remote communications technology, but there is so much more in store. *TechSee* is a startup that helps engineers manage network troubles remotely while *Kemtai* creates a personalized home fitness experience, including training with a virtual AI coach that can see them.

2. Diagnostic Testing in Real Time

Who would have imagined that diagnostic testing could take place in parking lots, open fields, and even drive-throughs! Now that testing has been freed from the confines of labs and clinics, startups such as *Sight Diagnostics* and *MeMed* are perfectly suited for this new world of "fast food" testing.

3. Robots Learn to Teach Themselves

During the OurCrowd Global Investor Summit, we predicted anything that can be automated, will be automated. Still, we hadn't imagined a global pandemic that would accelerate the automation trend this quickly. *Kaholo*, a low-code visual platform for automating IT and DevOps tasks, allows companies to automate more of their back-end processes. Companies such as *Kryon* are spearheading the Robotic Process Automation revolution, replacing billions of repetitive manual procedures without any human intervention.

4. The Doctor Will See You Now - Online

During the global lockdown, brick-and-mortar medical clinics were shuttered, leaving patients cut off from their physicians. Telemedicine thus surged. *TytoCare* has a cache of tools that allow physicians to perform physical exams on patients in their homes while patients share data using cloud-based solutions. *DarioHealth*, a leader in remote diabetes monitoring and management, has partnered with startup *MediOrbis*, to provide 24/7 coverage and monitoring.

5. Data Collaboration Explodes

Although countries shut their borders and restricted travel, the distance between Tel Aviv, San Francisco, and Shanghai has never been shorter. For example, Chinese and Australian researchers made Covid-19's genome freely available. *Data.world* has built a platform that enables data scientists, business analysts, and decision-makers to find, understand, access, and use data anywhere it exists.

6. Microbes Beware

Personal hygiene is an underestimated factor in infection control. A person wiping down a chair is not just a germ nut anymore. Startups like *SaNOtize* are working to help individuals with portable anti-bacterial nasal spray.

7. Tech Helps Healthy Eating

Many of the deaths resulting from the Covid-19 pandemic include people with underlying conditions, motivating people to start eating healthy. *Tovala*, which delivers personalized meal kits, witnessed a 400% growth in the last few months. *Ripple* has found a way to employ proprietary clean protein technology to create great-tasting plant-based dairy alternatives.

8. Going Antiviral

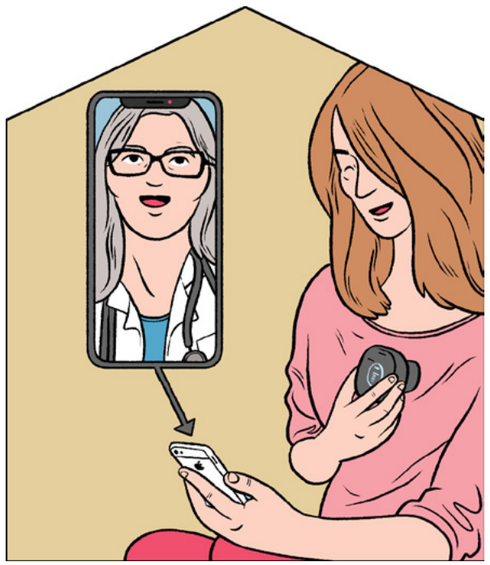
How do you kill something that's not alive? This is the greatest struggle that science has with treating viral infections. While mankind has developed hundreds of antibiotics, only a handful of successful antiviral drugs have been approved. However, this will reverse in years to come with new therapeutic options for both Covid-19 and other viral infections.

9. New Cyber Threats Emerge

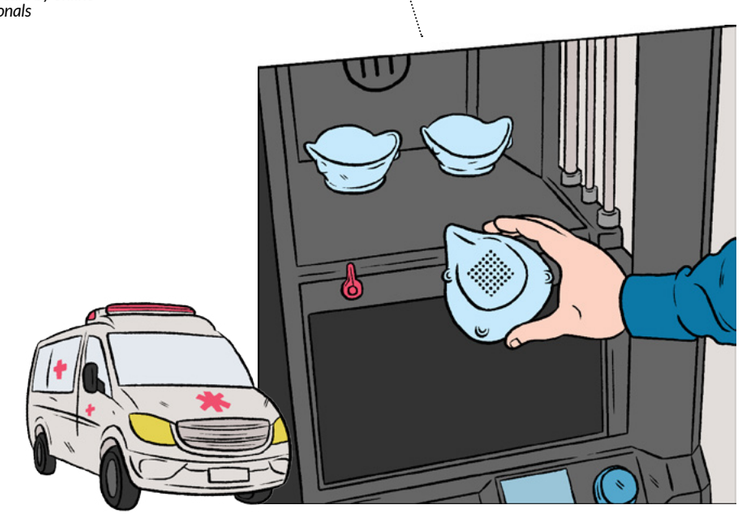
The world has seen a dramatic global increase in cybersecurity threats during the Covid-19 crisis as countries focus on public health. *IXDen*, the leading provider of IoT security solutions for critical infrastructure, protects against malicious breaches seeking to cause functional problems. *CyberMed* is focusing on intelligent detection, prevention, and revision solution for medical devices.

10. Designer Vaccines Prepare for the Next target

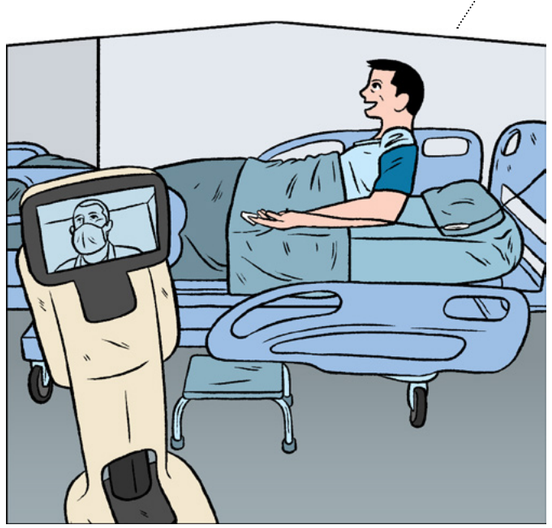
Vaccines are considered one of the greatest medical innovations of all time, but must be perfectly tailored to a particular strain of virus. *MigVax* is thus feverishly working on a designer vaccine that would be administered orally, making it safe for immune-suppressed patients.



The First Step: Telemedicine
The patient's journey will begin digitally and remotely and will then be redirected to required care by online professionals



On-Demand Medical Equipment:
Production of equipment from ventilators and masks to spare parts will be decentralized: many will be 3D printed on the spot



Corona Robots:
Robots will help medical teams communicate with, and deliver medications and meals to patients in isolation, reducing unnecessary contact

Disinfection:
Hotbeds of infections, hospitals will apply innovative ways of disinfection via UV-C light, air filtration or special surface coating

Intensive Care

Greater agility, better infection containment, fast diagnostics and telemedicine: Meet your healthcare providers post Covid-19

Ariel Krause,
Medical Investment Analyst
Illustration **Yaniv Torem**

When the coronavirus surfaced in China in December 2019, it set off a domino effect worldwide - with the number of active cases snowballing rapidly.

By February 2020, the daily increase in people falling ill with Covid-19 was in the thousands and -though international borders closed down and households went into lockdown - active cases skyrocketed in June to approximately 130,000 new cases a day, according to Worldometer.

Major global cities from New York, to London, and Mumbai found their healthcare systems direly overwhelmed by the tsunami of symptomatic citizens. Many countries tried to "flatten the curve" of the contagious infection to manage the unprecedented overload on public health systems, and to distribute the demand for medical care, intensive care unit beds, and ventilators over a longer period.

This large-scale global pandemic made healthcare - an industry traditionally slow to adopt innovation because of cumbersome regulatory and governmental pathways, low IT budgets, legacy systems, lack of trained personnel, and more - ripe for disruption. Technology entrepreneurs, unfettered by politics, bureaucracy and public financial constraint, entered the mainstream for the first time in order to triage the chaos raging in medical care in the face of Covid-19.

Israel differs from other western countries in that it integrated tech into its medical system years before the emergence of the coronavirus. Israel stands at the vanguard of healthcare innovation, boasting a 100% fully digitized health system: its citizens, fully covered by national health insurance, can schedule medical appointments, check laboratory test results, and generally manage their health online.

Israel also serves as an optimal beta-testing site for novel ideas as its world-renowned medical and research institutions (including Sheba Medical Center, the Weizmann Institute, the Rambam Health Care Campus, and Hadassah Hospital) and health providers (Clalit and Maccabi) have developed globally-acclaimed pioneering digital health initiatives for millions of patients. These systems are based on one of the world's most vast databases of lifetime personalized patient health records, which are released for therapeutic and research use by the Israeli government. For example, an affiliate of one such institution, the Migal Galilee Research Institute, ***MigVax*** is developing an oral Covid-19 vaccine that does not contain any form of the virus itself - creating a safe template for preventing future strains of the coronavirus.

The extreme circumstances of the pandemic accelerated global healthcare's digital transformation, with governments and regulatory bodies following suit to loosen rigid bureaucratic processes. The digital penetration of healthcare is here to stay - not just in how medical professionals contain the virus and prevent its spread, but in how they interact with, diagnose, and treat patients across the board.

A Physical Transformation

The first long-term changes the world will witness in healthcare will be physical: greater agility in how hospitals and equipment are structured is now a prime focus, according to McKinsey.

To optimize infection containment and control, patients will require single rooms instead of being separated by curtains, elective care can be postponed or relegated to the patients' homes or specialized centers, and hospitals' ability to seamlessly convert regular beds to crucial care beds will be prioritized.

In addition, production of medical equipment from ventilators and masks to spare parts will be decentralized: many will be 3D printed on the spot, as was done in Italy. In Israel, cutting edge 3D printing technology allowed ***Nexa3D*** to quickly mass produce professional-grade face shields for frontline workers and provide them to hospitals at affordable prices.

Since the Covid-19 virus is believed to survive long

periods of time on various surfaces, and hospitals are hotbeds of infections, there is a strong need for unrelenting and meticulous disinfection of medical facilities. ***Juganu*** developed a special UV-C light sterilization feature for hospitals and labs that can kill over 90% of viruses and microbes, without penetrating or damaging human skin. Two more Israeli companies that are rushing in to disinfect crowded indoor spaces are ***Aura Smart Air,*** which screens and targets Covid-19 microbes in the air filtration system, and ***Bio-Fence,*** which developed coatings for walls and partitions based on an innovative polymer that eradicates bacteria and viruses.

Finally, ***SaNOtize*** serves as a preventative defense for the essential health practitioners coming into contact with infected patients: the nitric oxide solution, sprayed into the nose, utilizes antimicrobial and immunomodulating properties to neutralize viruses trying to enter the respiratory system.

The second long-term changes the world will witness in healthcare will be virtual, as Covid-19 brought telemedicine as a delivery paradigm for medical care center stage. In the U.S. preceding the pandemic, telemedicine adoption by patients and physicians was slow to uptake with only 18% physician participation. It dramatically increased over the past few months to over 50% physician adoption, Fierce Healthcare reports.

Healthcare workers are

PulmOne created the first portable Pulmonary Function Testing machine, providing accurate measurements of lung capacity

MeMed can decipher within two hours whether an infection is bacterial or viral

The first long-term change in healthcare will be greater agility in how hospitals and equipment are structured

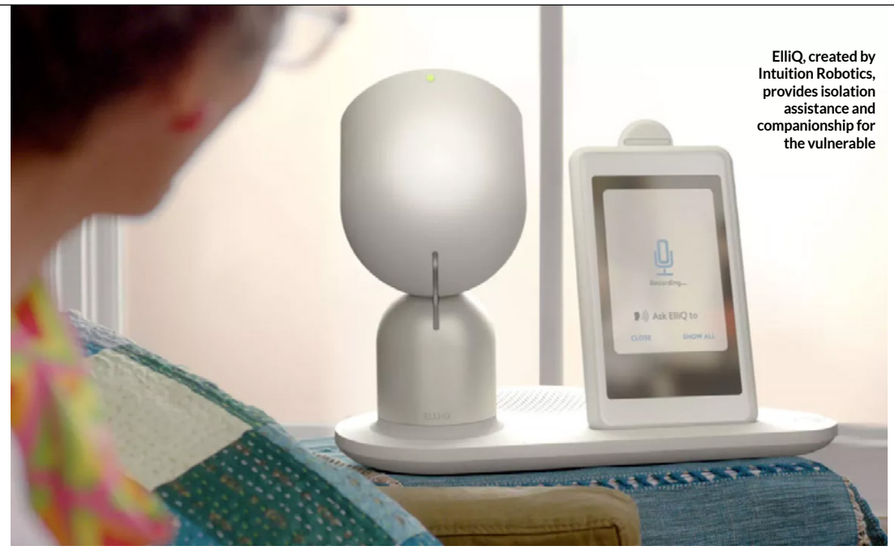
migrating essential in-person services online, out of the need to minimize contact with infected patients, including: diagnostic testing, treatments, monitoring, and even administering medication! These services are enabled by the enormous rise in digitized patient records globally, providing the datasets necessary for artificial intelligence-based systems to significantly improve medical performance, according to Forbes.

One example is a platform by ***Diagnostic Robotics,*** which uses a questionnaire triage system to analyze symptoms and generate a personalized risk profile for Covid-19, guiding medical professionals to the most urgent cases. ***Data.World*** launched a Covid-19 Data Resource Hub, revolutionizing how individuals and organizations process global coronavirus trends. Helping Pfizer obtain FDA approval for a Covid-19 drug in record time (under a week), ***CytoReason*** aggregates proprietary data from pharmaceutical companies across the industry and uses it to train its computational models of human disease.

Neura integrates data gathered from mobile devices, including the detection of infection chains, to optimize government and healthcare cooperation.

Providing contactless diagnostic testing is ***VocalZoom***, which developed radars that read nano-vibrations of the skin from a person's pulse to capture heart rate variability remotely, allowing non-invasive and quick screening of potential Covid-19 respiratory symptoms en masse - even among those appearing asymptomatic.

Helping medical teams communicate with patients while simultaneously reducing direct contact is the "CoRobot" (Corona Robot) produced by ***Temi***, which can be operated remotely to perform tasks like measuring



ElliQ, created by Intuition Robotics, provides isolation assistance and companionship for the vulnerable

patients' temperatures, delivering medicine or antibiotics to them, and even deliver meals. ElliQ, created by ***Intuition Robotics***, provides isolation assistance and companionship for the vulnerable.

For patients recovering at home or in quarantine wards, ***TytoCare***'s device allows physicians to perform remote medical exams, including lung exams, and monitor patient progress without exposure. Similarly, ***K-Health*** connects smartphone users with board-certified doctors to discuss symptoms and receive care from home.

Medisafe provides physicians with remote visibility into the medication management of homebound patients from its personalized mobile health platform. ***DreaMed*** offers a remote insulin therapy management system, using AI, for diabetes care at home and facilitates patient-doctor communication.

Telemedicine is turning into the "front door" for health services. The patient's journey will begin digitally and remotely and will then be redirected to required care by online professionals, reducing

TytoCare's device allows physicians to perform remote medical exams, including lung exams, and monitor patient progress without exposure

non-essential contact between healthcare personnel and non-acute patients.

Time Transformation

The last long-term change the world will witness in healthcare will be the trend towards making diagnostics more time-efficient using machine-learning technology. Israeli technologies are leading the way in formulating technologies that provide rapid testing results.

For example, ***MeMed*** can decipher within two hours whether an infection is bacterial or viral. ***Barcode Diagnostics*** can determine the efficacy of multiple chemotherapy drugs on a patient's cancer, according to the patient's specific DNA barcode.

Sight Diagnostics provides an accurate point-of-care Complete Blood Count (CBC) in 10 minutes, eliminating the need to transport infected samples to labs for results - also reducing the risk of further infection.

The following three companies automate diagnostic testing, optimizing medical performance. ***PulmOne*** created the first portable and complete Pulmonary Function Testing machine, providing accurate, repeatable, and fully automatic measurements of total lung capacity.

Scopio automates the imaging of full microscopy samples into high-resolution scans that can be shared digitally and viewed by other health care professionals remotely. Its built-in AI tools classify cells and compile a report of the results, accelerating the diagnostic process. Finally, ***Zebra Medical Vision*** uses healthcare provider datasets and image processing algorithms to automatically detect abnormalities (including Covid-19 findings) on standard, contrast and non-contrast, chest CT-scans.

Mitigating the risk of all of the aforementioned medical devices and clinical networks is ***CyberMDX***, which safeguards real-time data on device usage, performance, and inventory.

Though the healthcare industry is often cautious regarding the adoption of technological advancements, the Covid-19 pandemic has catapulted hospitals from hotbeds of infection transmission to incubators of innovation. The world can be hopeful that leaps forward in the digital healthcare revolution will be able to leverage vast datasets and AI to predict future outbreaks and create mechanisms to suppress them before they spread.

Natalie Milstein assisted in writing this article

1. Temperature Control
Passenger body temperature is automatically monitored upon entry to or exit from the airport

2. Disinfection Tunnel
Passengers are disinfected by walking through a tunnel; Far-UVC light can be used to kill viruses without penetrating the top layer of human skin

3. Multi-sensory Screening
Contactless screening based on a variety of confirmed bio-markers, allowing for screening of a large number of people, even those who are asymptomatic

4. Secondary Bio-Screening
Additional tests are performed on passengers who fail the initial bio-screening

5. Self Check-in and Sanitagging
Automated kiosks for check in and bag drop will include disinfection of both checked luggage and carry-on

6. AI Security
Visual AI technology used to expedite the security process in order to avoid long queues and enhance social distancing

7. Social Distancing
Sensors with HD people-tracking and counting capabilities will ensure passengers are keeping a healthy distance from each other

8. Welcome Back!
Arriving passengers will be required to undergo the same bio-security procedures before they leave the airport

Have a Biosafe Flight

Startups are stepping up to re-imagine air travel in the wake of the pandemic: Welcome to a new world of biosecurity, disinfection tunnels and baggage sanitagging

Yakir Machluf,
Mobility Lead
Illustration **Yaniv Torem**

In retrospect, December 2019 seems like ancient history. So much so that the New York Times coined a new historical divide: B.C. and A.C. - Before Covid-19 and After. While we have not even begun to fully grasp how the A.C. world will look, one thing is certain: the outbreak will radically reshape many industries, with the leading one being the aviation industry. It is hard to fathom that only a few months ago (back in B.C. days), one could pick a desired destination, waltz into an airport, drop off one's luggage and, after a fairly quick security check, board a plane to said destination. Granted, airport security checks did tighten after 9/11, but those changes will pale in comparison to the changes that will be implemented due to the new-found need for biosecurity at airports.

Biosecurity refers to a set of preventive measures designed to reduce the risk of transmission of infectious diseases in humans, animals, and crops. While measures to enforce the second and last have been implemented widely, biosecurity measures for humans have received little focus. Perhaps such human bio-screening would have rendered ad hoc measures such as sending all travelers into a

two-week quarantine or global border shutdowns unnecessary - and mitigated the over 61% decline in flights globally in April 2020, compared to the same period last year. After such measures are applied, there is no doubt that many points along the passenger's aviation journey, from check-in to baggage claim upon landing, are destined to change.

Enter the Startup Nation

While various analysts suggest that it could take up to five years before passenger numbers return to 2019 levels, airports are already diligently working and collaborating with tech companies to ramp up biosecurity protocols in order to enable the safe return of passengers to the skies. The Israeli tech ecosystem - known for its ingenuity, agility, and ability to act fast - saw many of its startups adapt their core technologies to transform the future of air travel.

Future passengers will encounter a new layer of screening - bio-screening - before they even leave their vehicle. ***UVeye,*** a company which regularly focuses on inspecting vehicles for damages and concealed explosives, has modified its solution to help detect whether drivers and travelers in a vehicle have a fever, a symptom of Covid-19.

Entering the airport, passengers will go through additional measures such as disinfection tunnels and multi-sensory screening. ***Juganu***, which developed the JLED smart-city infrastructure, will equip disinfection tunnels with far-UVC light, a wavelength that can kill viruses but cannot penetrate the top layer of human skin. Thus, whatever microbes may be embedded on the passenger's clothing and luggage before arriving are eradicated before entering the airport. ***VocalZoom,*** a developer of hyper-sensitive lidars for contactless predictive maintenance in industrial applications, now offers contactless screening based on a variety of confirmed bio-markers, allowing for screening of a large number of people, even those who are asymptomatic, in public locations. ***NanoScent***, a leader in AI scent recognition, is developing a 30-second test for Covid-19 based on a passenger's breath.

In the unfortunate case in which a passenger fails the above tests and exhibits symptoms, companies like ***MeMed*** and ***Sight Diagnostics*** will allow for onsite AI saliva and blood tests, respectively, with results within 10-15 minutes, making sure to keep only those who are actually infected on the ground.

Now that the passenger has made it into the airport, the check-in process will require all baggage to be "sanitagged," as suggested by a recent report by aviation marketing consultancy SimpliFlying. ***Sonovia***, developers of anti-pathogen fabric coatings, will infuse baggage with their coating as part of this sanitagging process, both for checked bags and carry-ons.

With social distancing measures in mind, prevention of queuing is key - especially in security lines. A company like ***SeeTrue***, which uses an unsupervised learning approach that operates beyond human sight, already provides automatic threat detection and alarm resolution for X-ray and CT systems. The solution enables travelers to keep all items in baggage (yes, even laptops!), streamline manual procedure, and increase throughput while maximizing safety to provide a seamless passenger experience.

Finally, once the passenger makes it to the departure lounge, ***Vayyar***, which developed a 4D radar for a variety of applications, will ensure adherence to social distancing rules with HD people-tracking and counting capabilities that can be used even in restrooms without breaching any privacy issues. In the restrooms and across the lounge, ***Soapy*** will provide AI-enhanced hand-washing micro-stations for adequate sanitation.

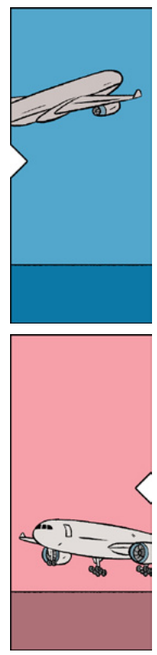
Easing border shutdowns and effectively opening back the skies will only be possible when full containment of the coronavirus has been achieved

The aviation industry is expected to return to 2019 volumes in two to five years — and with much greater resilience

Passengers won't need to worry about missing their boarding calls as ***Neura*** will send a push notification to their smartphones, just at the right time according to seat class, preventing any queuing at the gate in the process. According to SimpliFlying, in some cases, passengers might go through another disinfection tunnel on the jet bridge itself.

Though it might take a while before inflight-service robots welcome passengers onto the plane, ***Temi*** is already offering personable robots capable of engaging with humans and receiving requests. The A.C. economy cabin will feature plastic curtains between seats and might require travelers to BYOD (bring your own device) for inflight entertainment. Oh, and the instructional safety video before the flight? It's getting longer.

Upon landing, passengers will disembark and the plane will have to be thoroughly sterilized after every flight - adding precious minutes to the overall time on the flight line.



IntellAct provides airlines with a turnaround management solution that allows airlines, airports, and ground handling teams to address turnaround service bottlenecks and minimize delays.

Travelers entering their destination airport will again be greeted by disinfection tunnels and multi-sensory screeners. Passengers with virus symptoms that materialized during the flight or somehow slipped through the cracks of pre-flight bio-marker testing will be identified at this stage and be able to locate local healthcare services through ***AirDoctor*** or utilize ***TytoCare***'s telehealth platform for on-demand and remote medical examinations. Border control will be further automated and enhanced with AI facial recognition from companies like ***Corsight***. Finally, the infection-free travelers will exit the halls of the airport and their aviation journeys, until their return flights that is.

As parts of the world are embarking towards the new normal, others are still fighting to control the outbreak. Easing border shutdowns and effectively opening back the skies will only be possible when full containment of the coronavirus has been achieved. While the B.C. era carefree attitude of air passengers is unlikely to bounce back anytime soon, the road towards implementing effective biosecurity measures is only being paved now. In two to five years, the aviation industry is expected to return to volumes seen in 2019 - and with much greater resilience.

Just be sure to arrive at the airport at least 4-5 hours before your flight!

Natalie Milstein assisted in writing this article

OurCrowd Portfolio

Healthcare

MigVax, OSSIO, INSIGHTEC, Surgical Theater, Mimic, elminda, MST**, HIL Applied Medical, UpRide Robotics, PulmOne, RealView Deep Perception Live Holography, AlphaTAU, Global Kinetics Corporation, dreamed Diabetes, Nanomedic, MedAware, sight, zebra Medical Vision, Scopio, Medisafe, Barcode of Agnostics, trendlines medical • agtech • labs**, BrainQ, ReWalk**, sweetch, SaNOtize, INNOVALVE, MeMed

Mobility

Phantom Auto, Virgin hyperloop one, cartica, foretellix, arbe, intuition robotics, JUMP**, skyTran, INNOVIZ, Brodmann17, ARGUS**, RIDEVISION, VAYAVISION, superpedestrian, Zoomcar Never Stop Living

Consumer Hardware

MOLEKULE, core photonics**, GOSAFE

Consumer Software

nextpeer**, Parko**, stringify**, tubitv FREE TV & MOVIES**, skillz, SUBSPACE, Magisto**

Energy

LOCUSVIEW, mPrest, enVerid, Jugany

Cannabis

syqe medical, BOL Pharma Breath Of Life

Semiconductors/Optics

unispectral, HAILO Engineering Intelligence, vocalZoom, MultiVu, Celeno Communications

Cybersecurity

MORPHISEC, cognigo**, FIREBLADE**, BIOCATCH, THETARAY, KENNA Security, CYBERX**, SIXGILL Deep, Dark & Beyond, STELLAR CYBER, TRUSONA, SAYATALABS, ForceNock**, CYBER MDX, nanolock, PERCEPTION POINT, OPAQ Networks, ITsMine

Marketplace/E-Commerce

FRONTIER CAR GROUP**, BOATBOUND**, verse, Missbeez, the Bouqs.com, SPLACER, Casper, KLOOK, AbesMarket.com**, WayUp, FREIGHTOS Smooth shipping, ro, ModLi

FoodTech

ripple Dairy-Free As It Should Be, BlueNalu, silo, BeyondMeat**, BouxMatok

Agriculture

scio by Consumer Physics, Tevel Aerobotics Technologies, cropx, TARANIS

Drones

AIROBOTICS, EDGYBEES

Enterprise Hardware

Cellium Technologies, Highcon Direct To Pack, SonicEnergy, EYEWAY ALL IS ILLUMINATED, ASTRA, nexa3D, NSLComm, NEUREALITY

EdTech

EDUNAV, sense.

SportsTech

playsight, KEMTAI

FinTech/InsurTech

BILL GUARD**, wave**, HoneyBook, rewire, REVOLUTION CREDIT, yu, Lemonade, dailypay, TALA, EMQ, Varo, credorax**

Enterprise Software

appforma**, powwow mobile**, bioscience, BIZZABO, seeTrue, viewbix**, FUNNEL, influitive, appdome, data.world, proov, BT9, Apploi, amitree, near, Invertex**, KRYON, TechSee Intelligent Visual Assistance, SIGNALS ANALYTICS, nanorep**, ubimo**, noobaa**, neverware, applango, mentad**, cmagine**, Equipment Share, NEURA, CB4, BriefCam**, freeD FREE DIMENSIONAL VIDEO REPLAY TECHNOLOGIES**, codility, crosswise**, StackIQ**, Shopial**, PANORAMA, PushApps**

Funds

OurCrowd Pandemic Innovation Fund, OurCrowd IMPACT Fund, 7THIRTY, E2 CAPITAL, OurCrowd OC 50 Public Equity Fund, Radicle, OC 2 OurCrowd Continuity Fund, OurCrowd QURE, OUR INNOVATION FUND, LP, MANIV MOBILITY, OXX, COGNITIV, ADvantage, PROOF., USVP U.S. VENTURE PARTNERS, OCTTO

Incubator

Labs/02, Labs/08, FRESH START, SPROUT BREAK NEW GROUND, CanNegev

** = Exited Company

Counter Attack

Retail stores were already under pressure to change their business models to adapt to new tech. With the spread of Covid-19, that transition is now at full-speed

Bricks to clicks: *SMBs will not only need to develop websites and apps, and also employ strong back-end marketing, business intelligence and analytics*

Experiences, not transactions: *As more retail shifts online, brick-and-mortar retail will shift to deliver a branded experience unattainable from home*

Retail, transformed: *In-store and behind-the-scene operations can become pandemic proof via technologies such as camera-enabled automated checkouts*

Kfir Kachlon, Investment Principal

Illustration **Yaniv Torem**

Natalie Milstein

With Covid-19 social-distancing measures shuttering brick-and-mortar stores and shopping centers, the retail industry is facing an existential crisis.

In fact, Business Insider reports that over 4,300 stores are expected to shut down permanently in 2020 in the US alone and, according to Time Magazine, US retail sales plummeted 16% in April 2020. Legacy American retail giants such as Sears, JCPenny, Neiman Marcus, and J.Crew - which survived world wars, the Great Depression, and the global financial crisis - began to collapse with the advent of online shopping. Sears filed for bankruptcy in 2018 and the others followed suit in 2020 with the spread of the coronavirus, which may just spell their demise.

They are not alone. According to the World Economic Forum, CEOs representing almost 20% of wholesale and retail sales globally fear their companies may not survive the pandemic. While grocers, pharmacies, and companies providing essential goods are faring well, non-essential retail (offering non-food, apparel, and luxury goods) is suffering from a crippling plunge in sales.

Consumer Behavior

COVID-19 introduced two novel pain points to the brick-and-mortar space: society is conditioned to avoid human contact and touching items that others have touched - forever changing the in-store experience of physical product testing.

International consumers anticipate that their shopping behaviors will remain changed by frictions posed by the coronavirus pandemic, even after social-distance measures are lifted - and many hesitate to return to shopping malls, according to McKinsey reports.

Silver Lining

Despite this bleak outlook, we can glean vital lessons and a practical action item from the Global Financial Crisis, the last time consumer confidence dropped so dramatically.

That economic downturn forced consumers to save more, make fewer impulse purchases, and put more thought into discretionary spending - causing a surge in online research to compare products before buying; similarly, the 2003 SARS outbreak spurred rapid consumer adoption of e-commerce in Asia, according to articles from Medium and Digital Commerce 360.

Morgan Stanley already reports that e-commerce adoption in the US grew by 58% in April 2020, four times faster than the previous year's growth, projecting that 2020 will represent a two-year jump in the trend.

In this Darwinian moment of retail history only the brands that pivot and invest in restructuring their business models will survive. The tech-savvy and innovative that engage the homebound consumer will thrive.

Two imperative strategies include: 1) fashioning a digital identity (a.k.a. the "Bricks to Clicks" model) and, 2) repurposing brick-and-mortar retail to deliver a unique, branded experience unattainable from home.

Bricks to Clicks

This is the opportunity for SMBs to develop omnichannel connections to their customers - adding websites and mobile applications to their in-store offerings - and to integrate technology in their consumer-facing and behind-the-scenes operations.

There are many options to help the digitally stunted join the online bandwagon: SMBs lacking a website or mobile site can build these for free without design or coding skills with ***WIX*** through the use of drag and drop tools. They can also join e-commerce platforms like ***Shopify*** for access to a suite of services

such as online payments, marketing, shipping, customer engagement, etc.

Once companies have set up their digital presence and are ready to level-up, they can look to Israel for technologies enabling retailers to provide a seamless online and safe in-store experience for their customers, to learn about target consumers through business analytics, and to optimize operations.

For creative small businesses and entrepreneurs, ***Honeybook*** provides an online platform for easily managing clients as well as the administrative, marketing, and accounting aspects of their business. ***Panorama*** empowers users to create dashboards (without any coding background) to recognize anomalies in business and engage coworkers in problem-solving.

In the quest to acquire new customers and build personalized customer journeys, ***Near*** aids retailers with its mass dataset of real-world consumer behavior and machine learning models. Helping SMBs engage customers and discover, nurture and mobilize business advocates at scale, ***Influitive's*** marketing platform delivers powerful tailored experiences. Retailers can gain a strategic edge with ***BIScience,*** which tracks and analyzes competitors' marketing strategy success.

A platform for consumer-facing product companies to gain deep customer insights from online sources such as product reviews, social media posts by key opinion leaders, and patent applications was developed by ***Signals Analytics***. These services aggregating customer data could be key for struggling SMBs to generate demand.

Companies offering online payment directly from their own channels but lack coding capabilities can utilize ***Appdome,*** which secures mobile commerce for both iOS and Android apps, guaranteeing transactions and data privacy. Other cybersecurity companies protecting consumers' online transactions and preventing fraud include ***Riskified*** and ***Forter.***

There are a number of tools that the seller can provide to homebound potential shoppers who prefer not to touch and try on products in-store. Using ***ByondXR*** 3D imaging technology, stores grant customers the ability to view inventory and virtual showrooms in 3D and AR. Consumers with higher disposable income can outfit their bedrooms with smart mirrors from ***Memomi*** and "try on" clothes using AR and AI- without even taking off their pajamas!

E-commerce in the US grew by 58% in April, projecting that 2020 will represent a two-year jump in the trend

Tovala produces Wi-Fi connected smart ovens and meals that "cook themselves"

Customers needing recommendations can engage with a ***Mmuze*** virtual salesperson with AI voice and texting capabilities. Search engines are further catapulted into the future with visual search capabilities; for example, company ***Syte*** allows shoppers to upload a favorite influencer's Instagram picture to a fashion retailer's site and search for products similar to those appearing in the post.

Of course, elevated health protocol will limit or eliminate product testing from stores. Retailers can capitalize on this opportunity by sending samples directly to the consumer, perhaps through a loyalty program that also collects data about the customer's experience and journey. Taking this one step further is the potential for customers to make the products at home with the brand's guidance and raw materials. ***Tovala***, which currently produces wi-fi connected smart ovens and meals that "cook themselves" at the consumer's home, is developing capabilities for other uses at home such as cosmetics preparation.

Click and Collect

Once customers have chosen and purchased products online, retailers can take advantage of the accelerated trend of "Buy Online Pickup in Store" (BOPIS). Also known as "click and collect," this model offers shop-owners a smart way to drive in-store foot traffic and integrate their offline and online experiences. It offers an incentive for consumers who do not want to wait for deliveries and find returning purchases in-person more convenient. In the U.S., 67% of consumers have used the BOPIS method in 2020 and 90% of retailers intend to implement it by 2021, according to Invesp.

Brave consumers choosing to visit stores in-person will no doubt encounter a transformed in-store experience. Israeli technology startups offer solutions to retailers to make their physical stores more pandemic-proof by optimizing in-store and behind-the-scenes operations. ***CB4's*** AI detects human errors in real time, such as incorrect pricing signage or products hidden from plain view, to provide the store opportunities to fix issues, increase customer satisfaction, and heighten sale potential. Customers will likely face increased opportunities for frictionless self-checkout or even no checkout, if the retailers deploy ***Trigo*** and Amazon Go's ceiling sensor technology.

Retailers will also undergo transformations in their manufacturing, warehouses, delivery platforms, and fulfillment centers. Sellers can transform the efficiency of their inventory management and workflows with smart automation features: ***Kryon*** provides an intelligent Robotic Processing Automatic solution featuring machine vision which allows logistics software to automate high-volume and repetitive tasks with maximum accuracy. For food supply chains, ***BT9*** proactively monitors, analyzes, and disseminates data on the quality of perishables with disposable HiTag sensors.

Retailers that normally sell from their brick-and-mortar stores and choose not to implement BOPIS must invest in packaging design that allows the goods to be delivered without damage. ***Highcon*** provides creative and flexible design solutions that respond to company packaging requirements using digital folding-carton converters.

These technologies may seem out of a sci-fi movie, but they are here today to help retailers ride out the coronavirus and recession wave with smoother operations.

Repurposing the Brick-and-Mortar Store

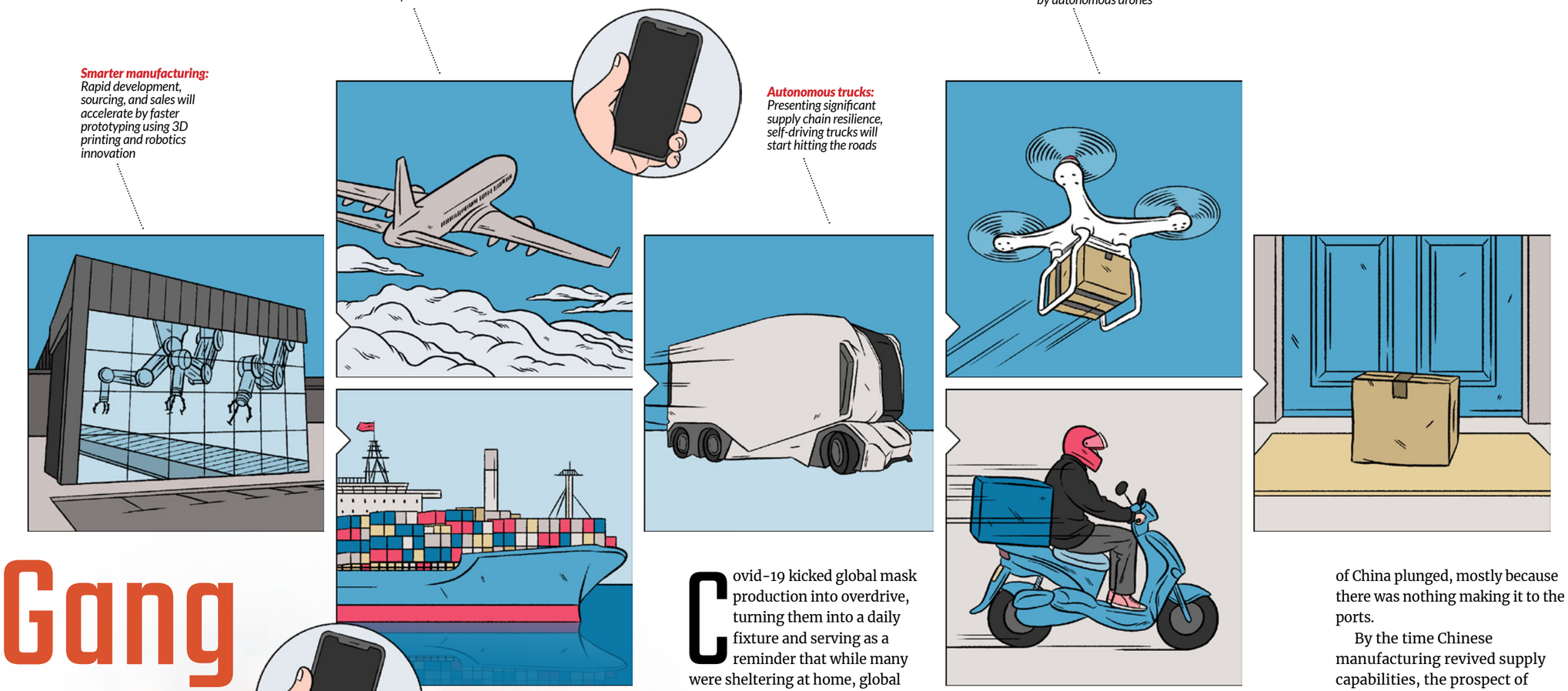
Another transformation of the in-store experience for the brave consumer is the repurposing of brick-and-mortar space from transactional to experiential. It is up to the retailers to make these changes unforgettable - and irreplaceable by automated, online experiences.

A brand leading the realm of experiential retail is Vans, a footwear brand targeting young skaters, offering an indoor concrete skateboarding ramp and street course with music, art, and street culture.

TOMs, a footwear company that delivers a free pair of shoes to communities in need for each pair purchased, placed VR headsets in 100 stores to "virtually transport customers to Peru" to witness the impact of the campaign on locals. TOMs also launched a coffee-roasting line, transforming physical stores into cafes servicing a close-knit customer base.

A final poignant example is the $25 napping experience at ***Casper's*** mattress stores.

Savvy brands recognize the opportunity in the Covid-19 landscape to revolutionize their customer experience: stripping away the transactional product offerings from the physical, moving them online, and providing an experiential, community-building space for consumers.



Chain Gang

Covid-19 revealed the absolute necessity for a functioning global supply chain, raising flags about the role technology should play in logistics

Eytan Buchman
CMO, Freightos.com
Illustration **Yaniv Torem**

Covid-19 kicked global mask production into overdrive, turning them into a daily fixture and serving as a reminder that while many were sheltering at home, global supply chains kept ticking. But supply chains did miss a beat or two, raising flags about the role technology should play in logistics.

Tech talk usually bypasses the supply chain sector, despite the nearly $20 trillion dollars in annual export of goods, with supply chains bringing food, clothing, computers, and, yes, masks, from factories worldwide to our doorsteps via a global network of airplanes, ships, trucks, and trains. Access to global trade now ranks up there with water, electricity, and internet in the modern Maslowian hierarchy.

Supply chains have thus started to emerge as a major tech focus. If combined, ***Amazon***'s warehouse footprint would sprawl across over 25% of Manhattan and, as of 2018, it boasted a fleet of close to 40 airplanes. Alibaba has committed some $14 billion to logistics subsidiary Cainiao. And a vicious war is being waged by the likes of Amazon, Walmart, and Target for home delivery.

Cargo, Meet Covid

Supply chains encountered Covid-19 early. Asian manufacturers typically shut down for the week of Chinese New Year, but in February, China extended the shutdown for over two months. Trucking between Chinese provinces became a bottleneck and the cost of shipping containers out of China plunged, mostly because there was nothing making it to the ports.

By the time Chinese manufacturing revived supply capabilities, the prospect of a long-term global recession impacted demand leading to a whiplash of cancelled or delayed orders. Meanwhile, passenger flights, which carry half of global air cargo, were cancelled en masse, making availability for urgent exports, like, say, masks, a serious challenge. Demand for urgent air cargo was at all-time highs, with prices 400% over February costs, while demand for ocean freight was plummeting.

International shipping wasn't the only victim. Sheltering at home introduced an e-commerce boom also constrained by delivery. By March 17, Amazon stopped accepting new deliveries of non-essential goods from the third-party sellers responsible for over half of

all of Amazon's sales. This left tens of thousands of Amazon sellers with inventory but no way to distribute them.

For supply chains of the future, coronavirus has already presented clear challenges. Navigating rapid demand and shipping capability fluctuations became impossible, international freight couldn't adapt fast enough, trucking slowed to a halt, and delivery became a roadblock. The silver lining? It also surfaced the potential opportunities that technology could introduce. And, if they don't emerge, the threat of a shift to near-sourcing could severely impact the sector as a whole.

Covid-19 made it clear that from manufacturing to global freight and delivery, there's strong demand for faster, more agile operations. Despite its devastating consequences, Covid-19 actually showed the progress that has been made, as well as the next steps. Calls for radically new technology are often not as loud as calls for faster penetration of existing technology or, more commonly, a recognition of the need for a new mindset. Let's take a look at four important examples of how supply chain technology will be shaped by this pandemic.

First Mile

Nearly any shipment, whether international, domestic, or last-mile delivery, requires the services of a truck. In non-Covid times, this is one of the most expensive parts of global shipping, primarily due to the expensive labor costs involved: safety regulations require down-time for drivers in order to ensure alertness, slowing down long-haul trucking or requiring multiple drivers. The one-two punch of electric vehicles to save on fuel costs, as well as the adoption of autonomous driving technology, can introduce radical efficiency to the shipping industry. Since most trucking miles are driven on interstate highways, which is less challenging for autonomous trucking, this has already been a focus, with companies like China-backed ***TuSimple*** or even Google's ***Waymo*** active in this space. However, during the outbreak, the barrier wasn't cost, it was simply the pandemic risk. Zooming out, autonomous vehicles can present critical supply chain resilience. This might go some way in explaining a $100 million dollar round raised in late April by ***Inceptio***, a Chinese autonomous trucking company.

Access to global trade now ranks up there with water, electricity, and internet in the modern Maslowian hierarchy

Volvo's autonomous truck, Vera. Pandemic-proof self-driving vehicles will introduce radical efficiency to shipping

Direct-to-Consumer Manufacturing Agility

Over the last few years, there's been a groundswell in direct-to-consumer sales, with companies like ***Warby Parker*** and ***Casper*** owning the entire manufacturing, logistics, and sometimes, sales for a bespoke product. Behind the trend lies two simple drivers. First, it's easier than ever to reach targeted audiences, either through demand aggregators, like Amazon, or through a company's own website. Second, it's easier than ever to tap into companies like ***Alibaba***, ***Sourcify***, and yes, ***Freightos.com***, to manufacture anything.

This makes small businesses infinitely more agile than the juggernauts, explaining the $1 billion acquisition of ***Dollar Shave Club*** by ***Unilever***. During the pandemic, this fact became even more apparent. On Freightos.com, shipments to Amazon dropped by 50% when non-essential product sales were halted. But within a week, they had increased by 25%, driven in part by the ability of many importers to suddenly source essential goods instead of their day-to-day business. The fashion industry has been shifting towards Fast Fashion - rapid development, sourcing, and sales - for years but this will accelerate in a post-Covid-19 reality. Beyond process changes, this trend will drive more 3D printing, which allows faster prototyping, as well as innovation in robotics in the manufacturing space.

In the food and beverage business, ***Trellis*** developed a food intelligence platform enabling forecasting and optimization of crop production, supply chain fluctuations and market trends.

For international freight, flexibility will remain the byword; the need to rapidly shift import activity from one country to another or even to change the course of a shipment in mid-process if, say, an airport is closed down due to a pandemic, will be key.

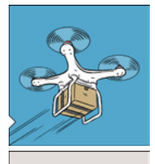
Capacity Management

Air cargo was pushed to its limit this year. The combination of capacity drops due to fewer passenger flights, with strong demand for urgent goods, led to skyrocketing prices. However, airplane capacity is an issue that plagues the industry on a regular basis. The average load factor - cargo capacity actually utilized - shockingly hovers in the 50% range. In other words, half of a plane's space is usually empty. This increases prices and exacts a heavy environmental toll.

The platform connectivity that has shaped enterprise B2B sectors like insurance and finance is taking shape through digital air cargo. Companies like ***WebCargo*** work together with airlines to digitize available capacity, add a layer of dynamic pricing, and then connect them directly to logistics providers or importers. These steps improve capacity utilization, lower the manual sales and booking time by upwards of three hours per shipment, and, most importantly, lower the end air cargo costs by some 20%, reducing the end cost for consumers. During Covid-19, nascent air cargo ***eBookings*** spiked initially, leveraging this new technology, until the stressors pushed the industry too far. However, it made the advantages clear enough that digital cargo procurement will almost certainly surge in a post-Covid-19 era.

Last Mile Delivery

With e-commerce delivery clearly more important than ever, the pandemic surfaced two major areas that require a technological solution. The first is the underlying number of companies that can fulfill deliveries, with Amazon owning some half of the entire US e-commerce market. This has prompted Amazon to build up its own delivery infrastructure. However, even before Covid-19, that still meant that half of all deliveries were fulfilled by other companies. The outbreak scare for companies over-relying on Amazon fulfillment is unlikely to be forgotten quickly. Here enter companies like ***Shopify***, which announced a massive fulfillment investment last year and continued with a $450 million robotics acquisition last September. Other companies, like ***ShipBob***, are also playing a role in letting any business, Amazon seller or not, manage deliveries. Finally, SaaS companies like ***Bringg*** offer subscribeware to manage internal delivery fleets, which further decreases external dependencies.



On the hardware side, Covid-19 also showed that scalable and autonomous delivery is critical. For fulfillment centers, for both resilience and sanitary purposes, companies like ***Fabric*** can play a huge role in democratizing last-mile fulfillment preparation. Meanwhile, on the delivery front, empty streets and fewer drivers helped cut through red tape and accelerate adoption of drone delivery, like ***Maana Aero***'s aerial drone delivery of medical supplies in Ireland.

While the pandemic introduced some major obstacles, chiefly the ability to maintain agile and resilient supply chains from manufacturing to delivery, it also surfaced an important takeaway. Nearly all the technology and new processes required to contend with these types of systematic shocker exist. Moreover, across the entire spectrum of businesses, from one-person e-commerce vendors to Amazon, there already is some degree of adoption. If anything, the crisis may have crystalized just how important faster and broader adoption of these measures are in order to support a world that is increasingly dependent on the ability to get anything anywhere. Because if Covid-19 has made anything clear, it's that ship happens.

Cashing In

While the financial industry wasn't hit as badly as others, it hasn't been immune. With legacy systems designed in the 50s, the outbreak may be the catalyst banks needed to digitize

Josh Liggett,
Fintech Lead
Illustration **Yaniv Torem**

The Covid-19 outbreak has already changed the way the world lives and works (or doesn't work). While many sectors, such as travel and healthcare, will be completely different in the post-Covid-19 world, there may be no paradigm shift for financial services. Unlike past crises, the current one was neither caused by massively overvalued investments with little traction (as in 2000) nor by a failure in the financial system itself (as in 2008).

Covid-19's impact on financial services will most likely be a drive to digitization, with financial institutions rushing to implement many of the digital tools they had available but didn't prioritize or integrate fast enough.

For traditional financial institutions that haven't fully embraced the digital age yet, it's time to move quickly or risk losing market share. Dramatic changes in various business areas, from revamping bank branches to creating new online features could be on the horizon. Financial institutions are going to partner with digital FinTechs in order to digitize their services and/or provide new offerings to customers. Those who are open to change and are willing to move fast can survive this crisis and emerge stronger.

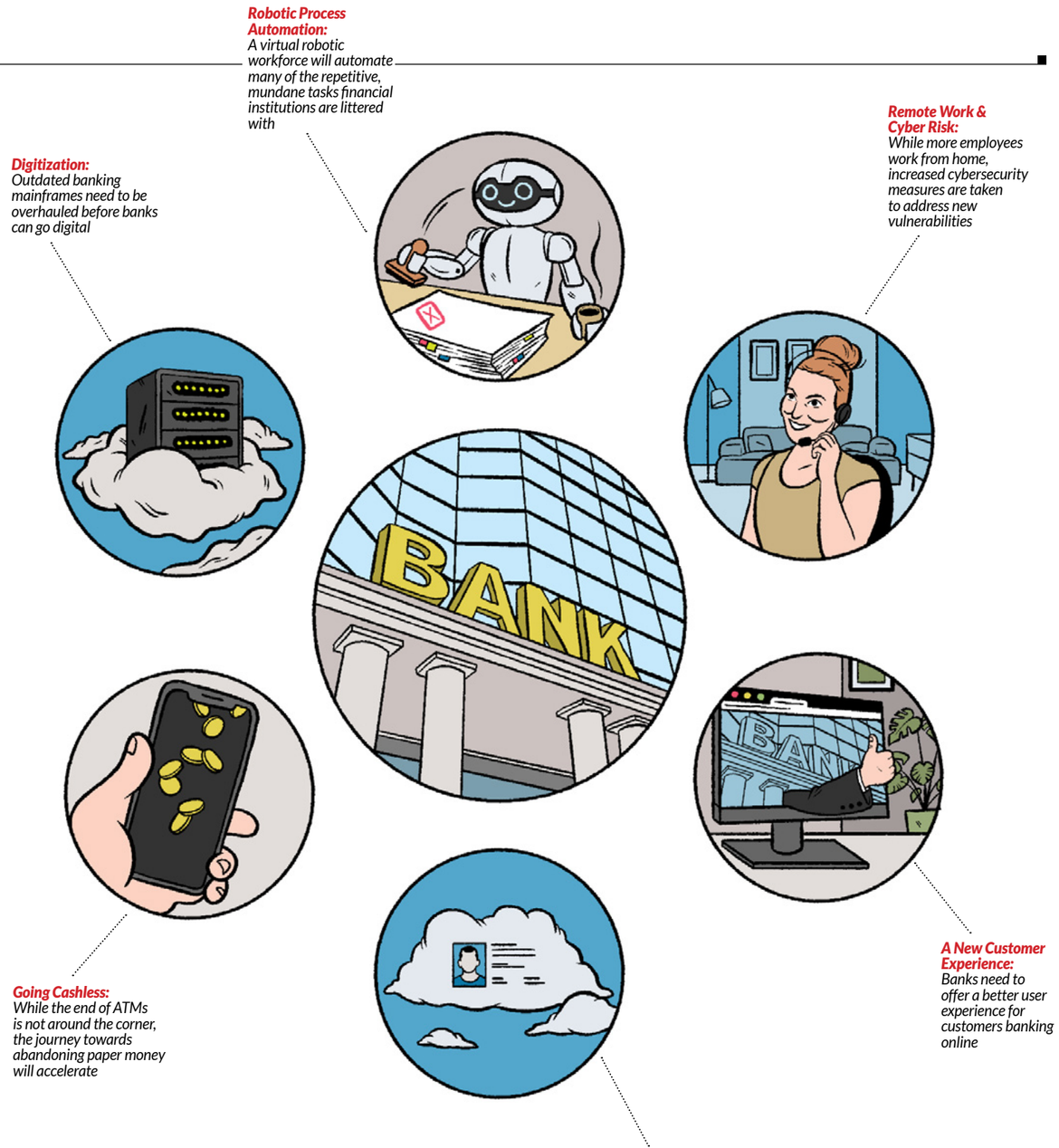
Banks get Physical

Financial institutions need to make sure they're physically ready for digitization. While some of the bigger banks have invested heavily in digital transformation, a vast majority of the industry is still built on legacy systems. Recent reports showed that 55% of banks lack digital maturity. A 2017 study by Celent, Accenture, and IBM found that 43% of banking systems were built on COBOL, a programming language from 1959. Some US states even lack COBOL programmers to help outdated banking mainframes. More than half of the industry won't be able to implement a FinTech solution if it wanted.

Financial institutions will either need to build new systems from scratch (massive software providers like IBM or AI-operating-system provider ***BlackSwan Technologies***) or create a bridge between the old back office and new digital tools ***(OpenLegacy)***. Overhauling a system may be costly and might intimidate some senior managers, but is essential in order to compete in the new Covid-19 reality.

Banks Go Remote

Many consumers still go to branches for their banking, and many don't even have online applications/solutions for completing loans, opening accounts, etc. Furthermore, many



employees are not prepared to be connected to banking servers to do their jobs. While banks can use VPNs for connectivity and provide employees with laptops, an additional issue arises: cyber risk.

There are startups available to help banks focus more on endpoint protection and ensuring data is safe.

ITsMine provides Beyond DLP™, a solution protecting organizational data proactively, seamlessly, and automatically, while simultaneously improving corporate compliance.

Perception Point and ***Morphisec*** provide next generation endpoint threat detection of malware attacks for digital enterprises. Both companies work together, as Morphisec protects the endpoint devices themselves and Perception Point spots threats from e-mail, Slack, Dropbox, and other tools. Two-factor authentication and hardware security solutions (such as ***HUB Security***) are examples of the many ways companies will need to protect their remote workspaces.

The Robotic Workforce Enters

Once back offices are digitized and employees are secure in remote locations, financial institutions can begin to reinvent the way they communicate with their customers. ***Lemonade*** has been a model in the insurance industry by making its app the center of its customer service. ***BlueVine***, ***Fundbox***, ***ezbob***, and ***Kabbage*** have had similar success with small business lending.

The center of these tools are AI for risk assessment and natural language processing (NLP) for communication. AI risk assessment has been a strong trend in moving away from traditional credit score models, especially for developing countries and small business lenders. While there are a plethora of AI tools and chatbots in the market, banks may want to use companies like ***EasySend*** to create, deploy, and maintain smart forms like loan applications and onboarding.

Robotic Process Automation (RPA) is another feature that many financial institutions are implementing. It was one of the hottest trends in FinTech even before the crisis. RPA is a standard term of a virtual robotic workforce that automatically performs mundane, repetitive tasks alongside humans. The financial sector is littered with these types of tasks and RPA companies have already automated various chores like replacing lost or stolen credit cards, reconciling scanned files with consultants' time sheets, and monitoring new regulations for compliance.

The Covid-19 crisis makes RPA even more important. Companies choosing to cut their burn rate and maximize employee efficiency can use RPA as a supplement to help with workflow.

43% of banking systems are built on COBOL, a programming language from 1959. More than half of the industry won't be able to implement a FinTech solution if it wanted

The RPA market is already well established, with multibillion-dollar RPA specialists ***Automation Anywhere***, ***Blue Prism***, and ***UiPath*** leading the market and companies like ***Pegasystems*** and ***NICE*** including RPA as a part of their product suite.

Kryon is providing RPA with a twist: it offers a patented machine vision feature called process discovery. This allows Kryon's software to automatically understand what tasks should be automated, permitting a smoother adoption process. For example, an insurance provider needed to visit 26 different bank websites to check the account status in each, verify that claims payments were made properly, and update them. This process took four days while Kryon completed it in two hours.

RPA will continue to grow as more companies recognize the incredible power of this technology.

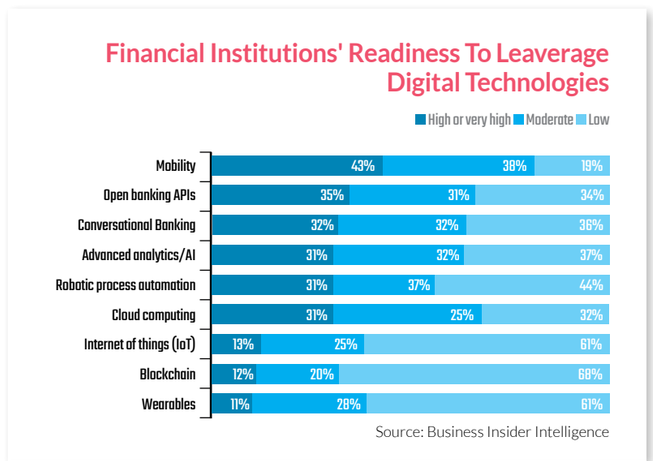
Digital IDs That Work

Another hot trend from before Covid-19 is digital identity. While we're still far away from a universal digital ID, Covid-19 has created a more pressing issue for financial institutions. In the new era, customers will do even more online, like opening accounts without ever entering a branch. This puts more pressure on financial institutions to authenticate a user. KYC (Know Your Customer) will extend beyond a regulatory framework to become "Know (if this is) Your Customer."

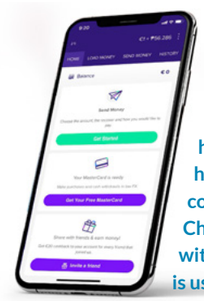
While two-factor authentication, complicated passwords, and other measures can be taken, they don't truly provide the digital identity that many institutions will need when moving significant funds. ***Trusona*** and ***BioCatch*** are two companies helping provide validation of digital identities, specializing in identity theft protection and biometric profiling, respectively.

The idea of abandoning paper money, which has been floated for the last few years, is even more relevant now with the need for social distancing. Sweden is planning on introducing its own digital currency in 2021 and plans to become cashless by 2023. A leaked early draft of the U.S.'s Coronavirus Aid Act considered a "digital dollar" as part of the stimulus.

While the idea of a digital dollar didn't make it into the final bill, it does provide insight into where the world is headed. Many banks are already connected to payment tools such as PayPal or Zelle and there are significant changes in the offing that affect current sources of revenue, such as the end of the ubiquitous ATM machine.



Challenger Banks Step Up



Rewire. Easy cash and withdrawals

Covid-19 may also accelerate the conflict between traditional and challenger banks.

Over the past few years, hundreds of millions of dollars have been poured into funding countless challenger banks. Challengers provide customers with a fully digital experience that is user friendly and easily connects with other FinTech products. For example, ***N26*** customers use ***TransferWise*** for cross-border FX transactions, not the bank itself. ***Rewire***, a challenger bank for the unbanked, uses partnerships with ATM networks and merchants to provide easy cash withdrawals and deposits.

Challenger banks are built for this crisis. They're fully digital so there's no bank branches. While retail banks are reeling about how to move into a different model of user interaction, challenger banks are already there. Traditional banks have tried to "recreate" challenger banks, but without much success (JP Morgan shut down its millennial-focused banking app Finn only after a year).

On the other hand, it's unclear whether customers are using challenger banks as their main or secondary accounts. Now, with economic uncertainty, will customers put a majority of their savings in a new, digital only, challenger bank?

Most challenger banks don't have a core, profitable business model. While operating in the red may have been acceptable in the pre-Covid world, it may not be so now. Challenger banks raised rounds at very high valuations in the past few years and while many of them claim to have lots of cash in the bank, they may be forced to raise down rounds to keep afloat, which may scare customers. Many have floated the notion of banks purchasing challenger banks for their digital platform and customer base. However, that may not be so simple, for reasons ranging from price and customer retention to the value of a challenger bank. It remains to be seen if challenger banks can finally compete on the same level as traditional banks, or if traditional banks have the agility and speed to digitize and adapt to what challengers have already created.

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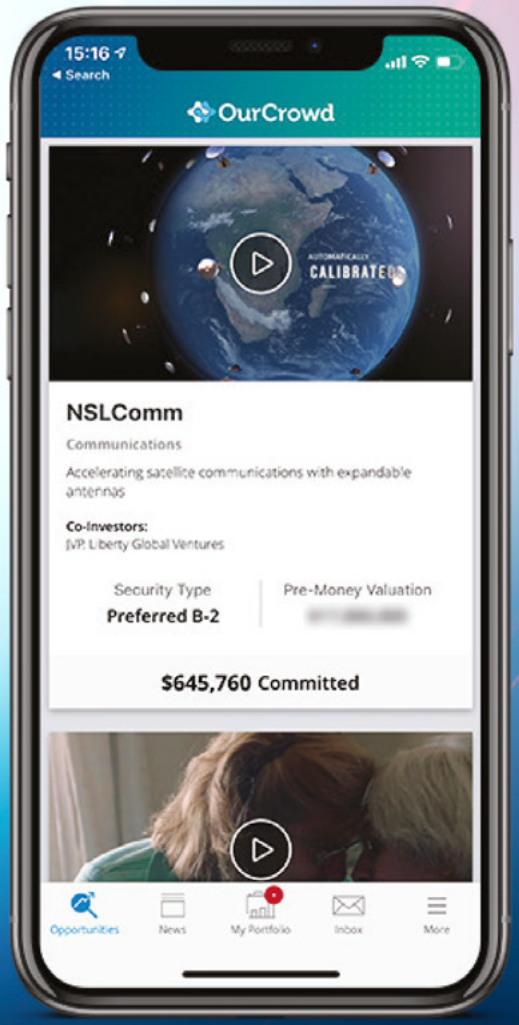

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