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APRIL 2021 Volume 37 Issue 4

Inventors

DIGEST

BEYOND WORDS

VIDEOCONFERENCE
INTERPRETING PLATFORM
CONNECTS THE WORLD

The Cellphone at 48

INVENTOR DISCUSSES
HISTORIC FIRST CALL

Prototyping Times 100

SINCE 2013: INNOVATION
AT BREAKNECK SPEED



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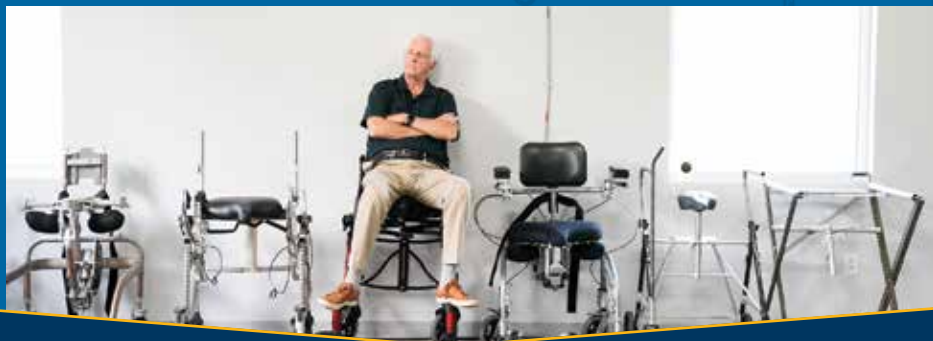
Journeys of Innovation

We tell the stories of inventors and entrepreneurs

Through engaging interviews, in-depth research, and stunning visuals, the United States Patent and Trademark Office's (USPTO) monthly Journeys of Innovation series tells the stories of inventors and entrepreneurs who have made a positive difference in the world. The USPTO features innovators of diverse ages, backgrounds, and fields of expertise.

These stories, which often share an inventor's or entrepreneur's journey from their own perspective, seek to inspire the next generation of innovators.

Read this month's story and past editions at www.uspto.gov.



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Here's My Improved Direction for GPS



Perhaps more than any person in the world, Karen Jacobsen knows people actually listen to her.

The woman known as "Australian Karen" provides the soothing, robotic voice that gives us GPS directions. On her website thegpsgirl.com, she claims to give directions in more than 400 million GPS units and smartphones.

Many people say publicly available GPS is the best invention since, well, invention. Maybe, but to some people there is something acutely annoying about a calm voice redirecting you as you scramble to locate a rest area after polishing off that supersized Coke.

In an interview with CBS in 2010, the "Dashboard Diva" was playfully chided for sounding condescending when redirecting lost drivers. "It's not meant to be condescending!" she said. "It's meant to be reassuring and will get you back on track!"

See, this is where I think Jacobsen got it wrong.

A couple months ago in this space, I proposed some inventions I would like to see. But to me, the biggest no-brainer would be a GPS voice with attitude to match the rest of the world.

You just turned left on Elm Street instead of right. Annoying! But you will probably reach your destination eventually unless you are taking advice from a man, correct?

So after hearing "redirecting," maybe it would lighten the moment to hear a sarcastic voice say: "Uh, what part of 'right' did you not understand?"

Or: "I can give directions in a foreign language if it would make more sense to you."

Or: "You have three options for moving forward—left, right, or straight ahead. If you want to go up, please redirect to a location where you can buy a freaking helicopter."

I always thought my idea was a natural until, naturally, I realized it wasn't my idea first. There apparently used to be a website called rudegps.com, but it no longer exists. (Why? IP conflicts? A humorless public?) Maybe someone else has revived the concept, or will.

Jacobsen's website lists her myriad pursuits: speaker, concert performer, voiceover artist, media personality. But the way I see it, she's missing out on an even better opportunity: to be the world's most listened-to sit-down comedian.

—Reid

(reid.creager@inventorsdigest.com)



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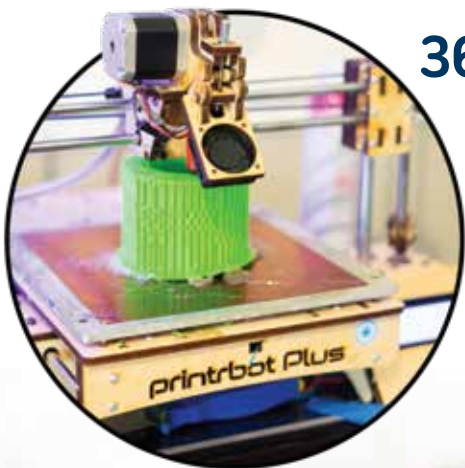
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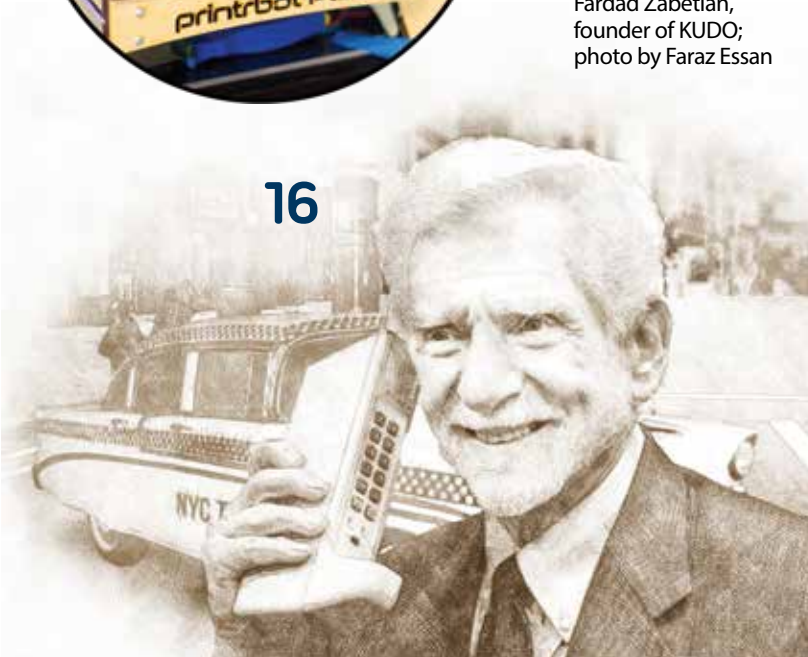


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DIRECTOR'S CORNER

Commander in Tech

As chief information officer, Jamie Holcombe leads USPTO's AI processes that benefit inventors and patent examiners



JAMIE HOLCOMBE was a 25-year-old serving in the U.S. Army when he was asked to lead a communication platoon of American soldiers. They were male and female. They ranged in age from 19 to 43. They came from diverse backgrounds in culture and language.

George Washington also knew the daunting challenges of young leadership. When he was a 25-year-old, he was colonel of the Virginia militia.

Although Holcombe would never compare his duties to Washington's, he strived to lead in the same way as America's first president.

“New AI and ML technologies will fuel efficiencies in examination search and classification.” —JAMIE HOLCOMBE

“George Washington's leadership style suited me: Collaborate and survey everyone's input before deciding clearly with boundaries—not micromanaging!—and executing ferociously,” he says.

Holcombe, chief information officer at the USPTO, is the principal advisor to the agency on the design, development, and management of its information systems and technology. “We operate and maintain the information infrastructure that manages inventions and ideas.”

Since coming to the USPTO from the private sector in 2019, one of his major accomplishments has been overseeing AI processes that benefit inventors and patent examiners. These have dramatically improved efficiencies while lowering costs.

When searching for prior art, inventors now have a public tool beyond the standard search engine. In late 2019, the enriched citation application programming interface (API) debuted to provide patent offices and the public with greater insight into the patent evaluation process, using data extraction.

The enriched citation API gives quick access to an organized and prioritized citation list that helps users identify relevant prior art. This ultimately improves the accuracy and consistency of the patent examination.

Empowered by state-of-the-art machine learning, AI, and natural language processing (NLP) algorithms, the enriched citation API analyzes the structure and content of the approximately 2,000 application responses (office actions) received daily. Patent applications are assigned classification codes from a list of over 250,000 terms, including the subject matter of the invention.

The API uses sophisticated information extraction and entity extraction algorithms to accurately locate:

- Statutes used by examiners,
- Claims rejected based on prior art,
- Particular prior art references cited, and
- Specific relevant sections in the cited prior art references used.

The algorithm routes the application to the correct examiner, then assigns the relevant codes for the purpose of assigning work to each.

“Previously, our staff had to craft enriched citations manually, and needed training on proper citation formats,” Holcombe said. “Such

a process could not ‘scale’ properly to keep up with the volume of data. Think about that old ‘Lucy and the Chocolate Factory’ episode.”

Another new innovation leverages machine learning, or ML—another subset of AI—to deliver an auto-classification tool for classifying patent documents using the Cooperative Patent Classification system. This potentially reduced classification costs to the USPTO by more than 80 percent.

New AI/ML algorithms are “trained” with usage to classify patent and non-patent documents with CPC symbols and C* symbols in hours, at one-tenth the cost. The service also incorporates user feedback to verify and validate the accuracy of results.

This auto-classification tool, called AutoClass, results in a smarter routing system that has helped the USPTO realize savings of \$1 million-\$2 million per year via reduced spending on outside contractors.

Holcombe says the USPTO has seven emerging technology initiatives underway that can drive new operating efficiencies. “Our top goals now include giant stabilization and modernization initiatives to support the growth of our business as we provide technology that empowers our employees and stakeholders,” he says.

In assessing the results of his department’s AI/ML efforts, Holcombe lists four takeaways linked to inventors, employees, and the agency as a whole:

- Start with a use case tied to ROI for the business. Act now and be bold!
- Ensure the results you are providing are useful and constructive (to users, not you).
- Remember, AI/ML supplements human intelligence. It does not replace it!
- Confirm with experts that results are reasonable before using a feedback loop.

Holcombe, by the way, was awarded the Douglas MacArthur Leadership Award and Most Outstanding Officer of the Year before leaving the U.S. Army. His leadership accomplishments at the USPTO have just begun.

WHAT’S NEXT

FREE VIRTUAL TRAINING

You don’t have to drop and give us 20 push-ups, but you may want to consider going to boot camp.

The USPTO’s **Trademark Basics Boot Camp**, running eight consecutive Tuesdays from April 6 through May 25, is a free, must-attend virtual event for small business owners and entrepreneurs interested in learning about trademarks and how to apply for a federal registration.

The first segment will focus on trademark protection in the United States. You can attend the whole series or select specific topics.

Space is limited, so register early. The USPTO will provide a PDF file of presentation materials within 2-3 days of each event.

More free virtual training is available through the **Patent Prosecution Boot Camp**, which will include four modules from April 7 through May 19. Law students or anyone interested in pursuing a career in intellectual property can receive information and insight from USPTO experts about the patent process, and the ways patent examiners review your patent application.



The free, virtual webinar series **Do You Know @USPTO** provides uniquely curated information and education about specific topics, initiatives, and offices at the USPTO. Each monthly episode features a concentrated look at content helpful for stakeholders interacting with the USPTO, whether pursuing a patent or trademark.

“Sesame Street” and Muppets icon Jim Henson will be the subject of April’s **Journeys of Innovation** series, which tells the stories of inventors or entrepreneurs who have made a positive difference in the world.

Announcements and registration will be found each month in the USPTO’s listing of events on the website events page (uspto.gov/events). Hear how the USPTO is here to help you!

NEWS FLASH

A Triumph of Insight

March Women's Entrepreneurship Symposium series inspired and educated a growing inventor demographic

A **LINE FROM** a Carly Simon song says there are “always times when your legs feel broken, but you still don’t drop out of the dance.”

What you do is pivot. That was the theme of the March 3 Women’s Entrepreneurship Symposium (WES) virtual panel discussion, “Always Dancing: Entrepreneurship and the Art of the Pivot.”

The discussion was one of three presentations that launched the 2021 version of the WES series, designed to celebrate Women’s History Month. Each weekly session included the insights of women leaders in innovation and entrepreneurship, as well as key figures in government and education.

The series, presented by the USPTO’s Office of Innovation Outreach, addressed women’s entrepreneurship, pathways to invention, available resources and services, networking, protecting your intellectual property, increasing women’s STEM participation, and more.

“Always Dancing” was particularly inspirational due to the positive, encouraging experiences shared from the diverse view-

points of a new inventor, a USPTO regional director, and a voting member on the Patent Public Advisory Committee of the USPTO.

Kimberly Meckwood, inventor of the padded Click & Carry handle

that enables shoppers to hold several bags at once, said she applied “seven or eight times” to “Shark Tank” before being accepted on the show and getting an offer from the Sharks. She left a secure insurance job that pays well, and has recently been granted two U.S. utility patents.

“Now my dream job is that I get to invent things for a living,” she told the WES panel. “I’m going to be filing for my next patent very shortly. So be on the lookout!”

Rocky Mountain USPTO Regional Director Molly Kocialski said two key components of entrepreneurship are self-awareness—knowing your strengths and limitations—and “being able to take feedback on where you might be able to pivot.” Because, as panelist Jennifer Camacho said, “entrepreneurship always has a pivot” of some kind, and often more than one.

Camacho, principal member at Taitle LLC, suggested embracing failure. “Share it with others. You don’t fail until you quit trying.”

The March 10 presentation on facilitating more STEM careers for girls K-12 and beyond—as women are only about 13 percent of inventors names on U.S. patents—prompted panelist Ruthe Farmer to observe: “Women are not an underrepresented minority. Women are half of humanity” and that in terms of the U.S. maintaining global competitiveness, “we are leaving a lot of people on the bench.” Videos for all five WES programs will be available online. See uspto.gov/about-us/events/womens-entrepreneurship-symposium-4.



“Now my dream job is that I get to invent things for a living. I’m going to be filing for my next patent very shortly. So be on the lookout!” —KIMBERLY MECKWOOD, INVENTOR OF CLICK & CARRY

TRADING CARD

NO. 10

Luther Burbank

LUTHER BURBANK would have been consumed with gleeful anticipation for Earth Day on April 22, just as he was at the beginning of every planting season.

Burbank didn't just love plants. Author Jane S. Smith wrote that he had "the uncanny ability to bend nature to his will."

In the early 1900s, people and celebrities from around the world visited the Santa Rosa, California, home of America's first botanical superstar to witness his exotic creations—which included spineless cacti. Photos show him in a field, rubbing his face against a cactus.

By the time he died in 1926, Burbank developed more than 800 strains and varieties of plants. They included 113 varieties of plums and prunes, 10 varieties of berries and 50 varieties of lilies. Despite his flamboyance, he is best known for his Russet Burbank (Idaho) potato and the Freestone peach.

But perhaps Burbank's greatest impact was being the inspiration for plants having their own patent law. Plant patents are a crucial intellectual property protection strategy for many in the agricultural field.

The Plant Patent Act of 1930 made it possible to patent new varieties of plants, excluding sexual- and tuber-propagated ones. Burbank's legacy is so fertile that he was posthumously granted U.S. Plant Patent Nos. 12, 13, 14, 15, 16, 18, 41, 65, 66, 235, 266, 267, 269, 290, 291, and 1041. He was inducted into the National Inventors Hall of Fame in 1986.

It all started with the Idaho potato.

Burbank was 21 when he bought some land in rural Massachusetts before developing that strain in 1872. This accomplishment, achieved by cross-breeding different potato varieties, resulted in one of the most significant single-cultivar heirlooms in the world today. Idaho potato growers earned an estimated \$1.1 billion in farm-cash receipts in 2020.

According to the National Inventors Hall of Fame, Burbank sold the rights to the Burbank potato for \$150 and moved to Santa Rosa because of its favorable growing climate.

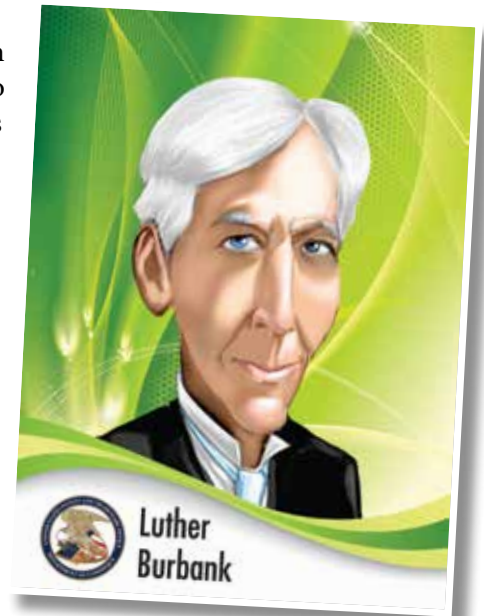
He used hybridization to graft seedlings onto fully developed plants across different strains. Burbank shared his methods with several hundreds of national and international nurseries via printed catalogues such as "New Creations in Fruits and Flowers" in 1894.

Almost a century after Burbank's death, visitors have come to the Registered National, State and City Historic Landmark in Santa Rosa

where he became a world-renowned horticulturist. A city park features his former home, greenhouse, gardens, and grave. (For a virtual tour, see lutherburbank.org.) A high school in Sacramento, California, bears his name.

The piper of plants lacked a strong business acumen and was never wildly rich. But his legacy in the patent and innovation arenas is priceless.

Requests for the trading cards can be sent to education@uspto.gov. You can also view them at uspto.gov/kids.



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CORRESPONDENCE

*Letters and emails in reaction to new and older **Inventors Digest** stories you read in print or online (responses may be edited for clarity and brevity):*

IANCU JOINS IP PROJECT

I want to inform readers of a new organization created to benefit the creative minds in America.

Two of my friends and colleagues—Andrei Iancu, former director of the U.S. Patent and Trademark Office, and Dr. Walter Copan, who recently served as National Institute of Standards and Technology director—are senior advisers for a new initiative on U.S. innovation and intellectual property policy with the bipartisan Center for Strategic and International Studies in Washington, D.C. It is called the Renewing American Innovation Project.

Efforts will focus on the opportunity to advance science and technology, IP, tech transfer and U.S. innovation policy, including the rights of the individual inventor. Project goals include illuminating the key policy and legislative issues essential to advancing U.S. innovation, technology transfer and competitiveness.

See csis.org/news/csis-launches-renewing-american-innovation-project

—LAWRENCE J. UDELL

FOUNDER, CALIFORNIA INVENTION CENTER

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SASSE SUIT GETS A LITTLE SASSY

There are signs that a trademark dispute over Scottish actor **Sam Heughan**'s whisky brand is leaving a bitter taste.

Heughan, who has starred in the Starz historical drama series "Outlander" since its inception in 2014, appealed a recent ruling by the European Union Intellectual Property Office that said The Sassenach cannot be used as a trademark for whiskies.

The *(London) Times* reported that Heughan sought the trademark through his firm The Great Glen Company so that his brand could be sold throughout Europe. (The whisky has been available in the United States since March 2020; it did not launch in the UK until December.)

But the EUIPO agreed with the Sasse distillery in Schoppingen, Germany, that "Sassenach" is too similar to "Sasse" and would create confusion for consumers. It also said the two trademarks were visually similar "to an average degree."

The appeal will probably be heard later this year.

Heughan's company had argued that Sassenach was an unflattering Gaelic term once used to refer to someone from England or the Scottish lowlands. The actor also uses the word as a nickname for his love interest in the TV series.

The Great Glen Company also claimed that the long-running show is familiar to audiences in Germany, so there would be no confusion between Heughan's brand and the Sasse brand.

Lawyers for the Sasse distillery countered:

"The television series may be as popular as the other side claims, which we deny, nonetheless it is not sufficient to assume that the average consumer knows the meaning of that term."

Ouch! That's a shot.



CORRECTION: Reader Mark Van Houten notes that the answer in the "What Do You Know" quiz in the March 2021 issue was incorrect. The Corvette was available in 1953, not 1967. —Editor

BRIGHT IDEAS

Studio Underd0g

BICOMPAX ST-1901 CHRONOGRAPH WATCH
underd0g.com

Playful and colorful, Studio Underd0g watches use current machining techniques to emulate a mid-century vintage silhouette while integrating a modern dial.

The varied size of the sub-dials is offset by the branding and movement details. These allow the chronograph seconds hand to pass through uninterrupted.

The Italian Saffiano leather strap has a beige Nubuck lining and tonal stitching. Straps feature quick-release spring-bars to ensure the strap can be changed without tools. All Studio Underd0g watches come with a Swan Neck Regulator as a complimentary movement upgrade.

The watches will retail for about \$525, with an estimated September delivery for crowdfunding Rewards backers.



“A pile of rocks ceases to be a rock pile when somebody contemplates it with the idea of a cathedral in mind.”

—ANTOINE DE SAINT-EXUPÉRY

POSSIBLE DELAYS

Coronavirus-related factors may result in changing timetables and later shipping dates than companies originally provided.



Thinking Egg II

NATURAL AWARENESS TOOL
theorijin.com

The Thinking Egg is a tool to help remind us to slow down and be more mindful, present and aware in our lives. This second version comes with new elements, bringing the total to nine eggs.

Designed from 100 percent natural materials, each Thinking Egg variation differs in weight, surface texture and elemental composition. The eggs are designed to feel great in your hands. They incorporate a functional and minimal base design to allow the egg to stand balanced while not in use.

The entire Thinking Egg collection of nine—Tiger’s Eye, sandstone, crystal quartz, Damascus steel, jade, Howlite stone, bamboo, lava stone and brass metal—will retail for \$152. Shipping to crowdfunding Rewards backers is planned for September.

HUNU+

FOLDABLE BIG CUP

wearehunu.com/

HUNU+ is a reusable cup that folds into a 3cm disc—small enough to fit into virtually any pocket or bag. A main driver for the product is sustainability: 165 million coffee cups end up in landfills every year, and fewer than 1 percent are recycled due to the plastic lining.

Larger than the original product, this silicon cup is available in 16oz and 20oz sizes and comes with a silicon straw that stores away inside the cup.

HUNU+ has a leakproof lid with a plug, as well as a heat band for hot drinks. It is BPA free, fully non-toxic and dishwasher safe.

One cup will retail for about \$27. Delivery for crowdfunding Rewards backers is set for September.



FORMART 2

DESKTOP VACUUM FORMER

formart.us/

Powered by industrial pumps and with a comprehensive database, the FORMART 2 allows anyone to make molds, shells, packaging and more.

The machine packs vacuum forming into a unit suitable for homes, offices and workshop spaces. It can create architectural models, industrial design prototypes and molds for desserts. The machine has the largest forming area of any desktop vacuum former on the market and is suitable for professionals and beginners.

Features include auxiliary mold stripping, material ID scanning, smart suction control and industrial-grade heating technology.

Shipping is planned for crowdfunding Rewards backers in September. FORMART 2 will retail for \$2,999.

Talk About Historic

MARTY COOPER RECALLS HIS FIRST PORTABLE CELLPHONE CALL, 48 YEARS AGO THIS MONTH **BY REID CREAGER**

MANY TIMES, Marty Cooper has told the story of making the first portable cellphone call. But he seldom mentions the part about how he was so excited that it nearly got him killed.

April 3, 1973. The U.S. Supreme Court's decision in *Roe v. Wade* was 10 weeks old, and the Watergate hearings were a little over a month away when Cooper began walking with a reporter outside the New York Hilton along 6th Avenue.

"I desperately wanted to demonstrate the freedom that results when the telephone wire is dispensed with, so I insisted that we keep walking as I described the phone and system," Cooper told *Inventors Digest* last month. "Fortunately for me, the reporter was a native New Yorker who was savvy enough to yank me out of the path of a taxi, which would certainly have killed me otherwise."

"The importance of that incident became evident in ensuing years because it permanently seared the experience into my mind. I had no

idea that the demo would have historical significance many years later; it was merely the first of many demonstrations of that phone."

Bragging rights

That historic phone call at 6th and 52nd proved a double thrill for the then-44-year-old Cooper, an engineer at Motorola in the fledgling wireless communications industry. Motorola and communications superpower AT&T were rivals in that fiercely competitive sector.

In fact, in 1946 AT&T introduced the mobile telephone.

But only 11 or 12 channels were available in a given area, and the large amount of power needed to drive them could only be supplied by a car battery. In other words, they were car phones.

Cooper once told "60 Minutes" that AT&T was "the elephant" and Motorola "the fly." So that early spring afternoon belonged to the fly. Cooper, who once led Motorola's car phone division, was going to revel in the buzz.

Shortly after nearly becoming the latest New York City traffic casualty, he had the presence of mind to make the historic call to friend and rival Joel Engel at AT&T. He dialed him up on his handheld, blocklike contraption that resembled Maxwell Smart's shoe phone from the TV show "Get Smart."

"I said, 'Joel, this is Marty Cooper,' and he says 'Hi,'" he told "60 Minutes" Morley Safer. "I'm calling you from a cellular phone, but a real cellular phone—a handheld, portable, cellular phone."

"And there was silence on the end of the line."

Now 92, Cooper still smiles about the moment. It's detailed in his new book, "Cutting the Cord: How the Cell Phone Transformed Humanity."

"I'm a positive person," Cooper told *Inventors Digest*. "I like all people because I learn from everyone."

"But the individual I called was on record—and still is—as totally dismissing Motorola's contribution to cellular phone technology. I could not resist the opportunity to tell him that I was calling him on a *real* cell phone ..."

"If I was creative enough, I would have come up with a few more suitable adjectives."

Climax of accomplishment

Cooper's best-known career achievement reflected a calling that was apparent early in his life.

He graduated from the Illinois Institute of Technology (IIT) in Chicago with a bachelor's degree in electrical engineering in 1950. Cooper

PATENT PATHWAY



Martin Cooper is the lead inventor named on "radio telephone system" filed on Oct. 17, 1973, with the then-U.S. Patent Office and later issued as U.S. Patent No. 3,906,166. John Francis Mitchell, Motorola's chief of portable communication products, and the engineers who worked for Cooper and Mitchell are also named on the patent.

joined the U.S. Navy and served during the Korean War, which also helped shape his career.

"The U.S. Navy taught me the skills of leadership and the responsibility we all have to support our fellow citizens," he said. "While they failed to turn me into a bureaucrat, I learned the importance of preparedness, teamwork and practice."

Cooper first put those skills to use at the Teletype Corporation before moving to Motorola in 1954. He earned a master's in electrical engineering from IIT in 1957.

His star had climbed at Motorola long before his career zenith in 1973. Cooper worked on projects such as the first radio-controlled traffic-light system, which he patented in 1960, and the first handheld police radios, introduced in 1967.

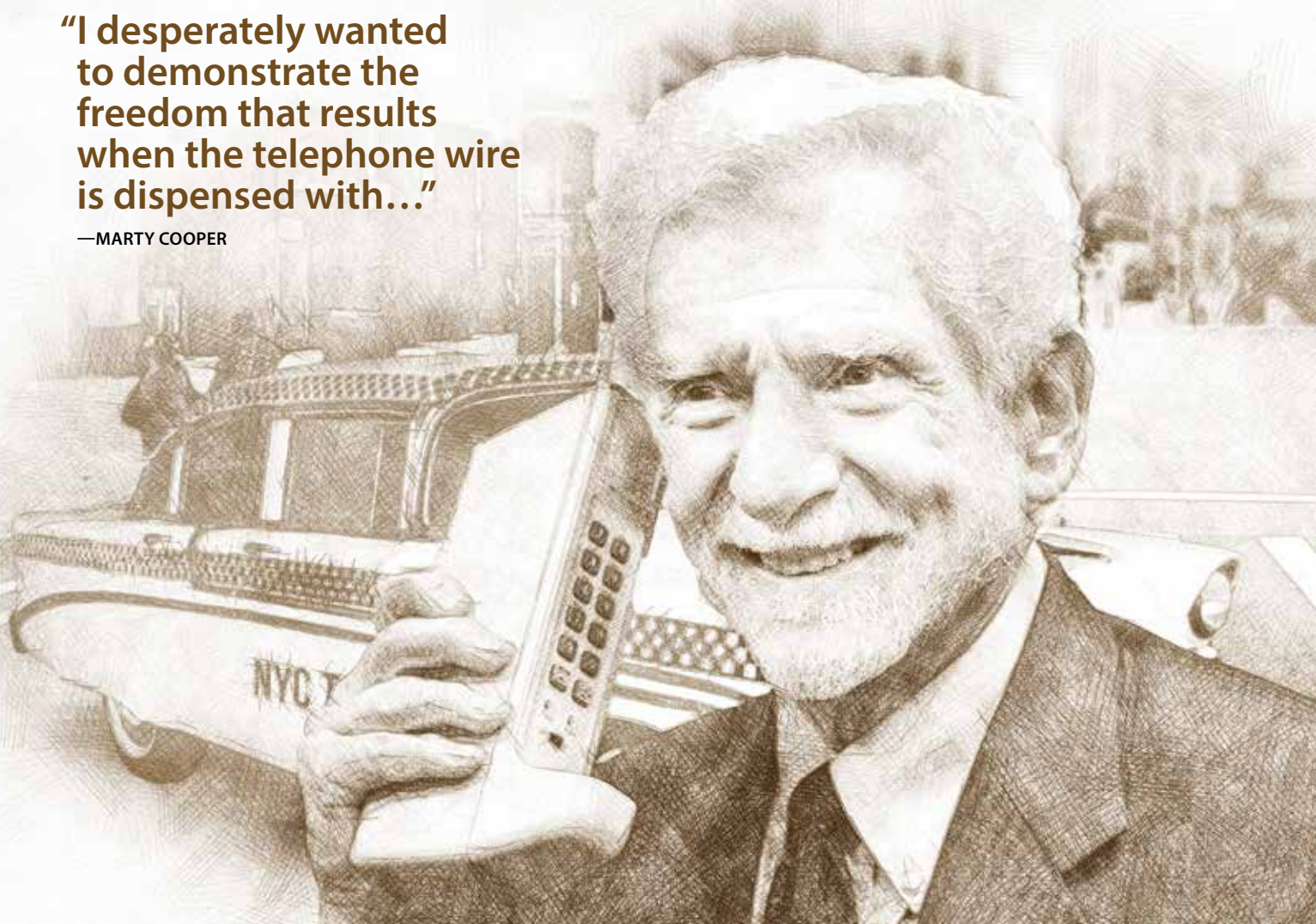
One of his most important career influences was his mentor John Mitchell (not the Watergate John Mitchell!), Motorola's mobile and portable products chief engineer who eventually became the company's president and chief operating officer.

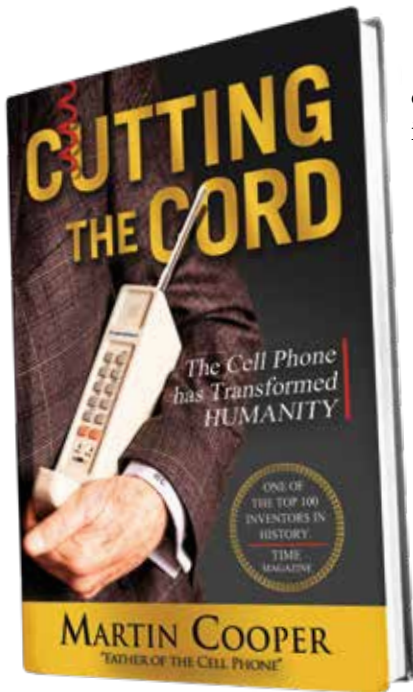
"John had a unique ability to distill technical and business issues to their essence," Cooper said. "He had no patience for egotistical puffery or academic elitism. His mantra was objectivity; there is no role for emotion or personality in business and engineering decisions."

"John Mitchell introduced me to the concept of the freedom that wireless communications brought to business and public safety people. With cellular technology, I extended that philosophy to embrace all people."

"I desperately wanted to demonstrate the freedom that results when the telephone wire is dispensed with..."

—MARTY COOPER





While writing his new book, Cooper realized how few people understand the impact of the cellphone in emerging countries.

Although the first handheld cellphone was Cooper's idea, it was a team effort. So despite the invention's iconic status, he is more proud of one of his 11 patents that reflected his contributions every step of the way.

"I'm most proud of a less-significant device called a 'channel element' that was used in the first nationwide dial car phones," he said. "It was small enough in scope that I not only conceived of the technology but did the initial design and then led its marketing. It's seldom that an individual has the privilege of contributing in every step from idea to user."

Challenges, timelines

We can credit Dick Tracy as the inspiration for the first handheld cellphone. Not Captain Kirk.

Although many reports say Cooper's idea originated with "Star Trek" visions, "Dick Tracy gets

credit. From the time we built the first handheld two-way radios for police departments, we yearned to reduce its size to wrist proportions.

"We finally succeeded when Dick Tracy revealed his wrist videophone—although the user had to be someone with huge wrists."

It seems impossible that the Motorola cellphone project took only 90 days, as has been widely reported. But Cooper said it's true.

"There were over 20 people on the research team that built that first phone. But we also needed to build phone switches and cell site transceivers for the demonstrations we did in New York and Washington, D.C. When you add the installation teams in those cities, the P.R. people and the lobbyists, more than 100 people were involved.

"The team started work in late December of 1972 and had the first fully working unit near the end of March. To be fair, the team was still repairing the two prototypes an hour before the April 3 demonstration."

Cooper said the biggest challenge of developing the technology was providing adequate power in such a small phone—a routine element in today's devices.

"Many breakthroughs were required to create cell phones with the power and small size of today's handheld devices. Before the cell phone, we had never built a two-way radio with more than a dozen radio channels.

"The first phone that we demonstrated in 1973 could tune to over 400 channels. These channels were synthesized by one of the first integrated circuits made by Motorola's semiconductor division. The ability to talk and listen at the same time had required filters that, alone, were the size of the entire phone.

"That miniaturization was a near miracle. The 1000 MHz frequency band in which the phone operated had never been used for commercial service. And hand-wiring all that technology with hundreds of individual components was, itself, a miracle. Even the antenna had to be specially designed."

Considering that the first cell phone is almost 50 years old and that the device did not become

HOW CAN THIS BE?

Marty Cooper, "Father of the Cellphone," is credited with one of the most impactful inventions ever. He was named one of the 100 most important inventors in history by *Time* magazine.

He was asked: How in the world are you not in the National Inventors Hall of Fame?

"I have received more than adequate recognition," he said. "There were other inventors and leaders who deserve a great deal of credit for the emergence of the cellular industry.

"Don Linder, the engineering manager who ran the team that made the first phone, was awarded three patents for technology in the phone development. I would love to see Don in the hall of fame. And Motorola's leaders, Bob Galvin, Bill Weisz, and John Mitchell, who bet that company on the success of cellular, have not had their contributions adequately recognized."



Left to right: John Mitchell, Bill Weisz, Don Linder and Bob Galvin.

“We finally succeeded when Dick Tracy revealed his wrist videophone—although the user had to be someone with huge wrists.” —MARTY COOPER



prominent until the 1990s, there is a time disconnect of sorts. Why did it take 10 years for Motorola's DynaTAC 8000x cellphone to come to market?

“The biggest problem was creating the technologies that allowed a commercially viable handheld phone to be manufactured,” Cooper said. “Even in 1983, when commercial cellular service began, a handheld phone cost \$4,000, equivalent to about \$10,000 today. And it didn't work very well.

“And when we finally were able to make commercial phones, the Federal Communications Commission, the U.S. agency that manages the radio waves, had to figure out who would be the service providers. The Bell System was a monopoly that was the only service provider for phone service before 1983. We at Motorola believed that cellular service should be a competitive industry.

“That decision took time to resolve; it engendered a battle between the Bell System and Motorola in which the FCC was the referee. Fortunately, the FCC made the right decision and the dynamic cellular industry of today became a reality.”

Still writing, thinking

The more Cooper has thought about how the cellphone has changed civilization, the more it led him to modify the focus of his book.

“When I started the book, my sole objective was to document Motorola's role in creating the cellular industry,” he said. “As that story took shape, I realized that there is rarely a eureka moment in inventing. Big inventions happen when inventors have the tools and confidence that come only from experience. So, I added some details of my early career.

“I also discovered that few people understood how the cellphone changed the lives of billions of people in emerging countries, so I added some examples of that viewpoint. Perhaps if I was younger, I would have undertaken three books.”

It's hard to imagine an invention more impactful than the cellphone in the past 100 years, especially as it relates to emerging countries—“where the ability to transfer money and the improvements in productivity have had a huge impact on poverty. A UN study estimated that 1.2 billion people have moved out of severe poverty in the past 20 years, largely as a result of the presence of the cellphone.”

Cooper is still thinking and solving problems. He is a member of the FCC Technology Advisory Council, the National Academy of Engineering, and other organizations that try to solve societal problems. He occasionally advises startup companies.

“And my wife, Arlene Harris, is a dynamic inventor and businessperson. Just keeping up with her is a full-time job.”

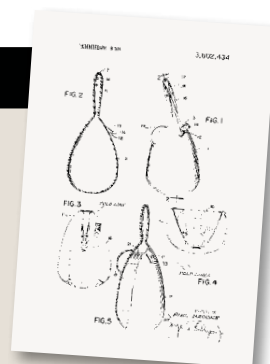
We couldn't resist asking Cooper if he still has a landline.

He does—“out of habit and because the line is bundled with my cable service. The only calls I get on that line are spam, but experiencing that annoyance firsthand allows me to complain with more legitimacy than those who are totally wireless.”

INVENTOR ARCHIVES: APRIL

April 9, 1974: Phil Brooks received a patent for a disposable syringe, although intravenous injections and infusion began as early as 1670.

U.S. Patent No. 3,802,434A says in its abstract description: “A single unit douching device includes a flexible bag having an opening therein. A rigid nozzle is affixed to the bag at a location remote from the opening. A sealing means is also affixed to the bag adjacent the opening to seal the opening after douching materials are inserted through the opening into the bag.”



Common Goal

INVENTORS AND ENTREPRENEURS SEARCH FOR DIFFERENT THINGS, BUT BOTH AIM TO THWART COMPETITION **BY JACK LANDER**

AN INVENTOR and an entrepreneur walk into a bar.

Each carries a small box. The inventor's box is made of clear plastic and contains an invention. The entrepreneur's box is opaque and contains nothing.

Bartender, to inventor: "What is that thing in your box?"

Inventor: "My latest invention. It's a portable mosquito exterminator."

Bartender: "Are you selling them, or what?"

Inventor: "I've applied for a patent. I want to license it to a manufacturer."

Bartender: "Aren't you afraid someone will see it and copy it?"

Inventor: "Nah. I want to show it to as many people as I can. I want the world to know about it and recognize it as a great invention."

Bartender, to entrepreneur: "And what's in your box, or is that a secret?"

Entrepreneur: "My box is empty. I'm still working on what to put in it."
(No joke intended.)

Basic differences

Inventors tend to fall in love with their inventions. They create a portable mosquito exterminator that is in search of a market.

Entrepreneurs search for and find a gap in a market, and they create or find a product to fill the gap. If the entrepreneur falls in love, it is with

the discovery of a market gap, not necessarily with the product that fills the gap. Both inventor and entrepreneur aim to delay, reduce or eliminate competition.

The inventor hopes to get a strong patent that provides protection against competitors for 20 years. But a patent is like a hunting license. It doesn't stop competitors; it allows you to find and sue them to restore your right to forbid them from making and selling your invention. Sometimes you're successful, sometimes not.

The entrepreneur hopes to create a product to fill a potential market need—and thereby delay or reduce competition using any or all of the following techniques:

- Being first in the market.
- Creating a novel market.
- Creating free publicity and paid advertising.
- Possibly obtaining legal protection.

The entrepreneur's risk of competition starts with the launch of his or her venture. Being first in the market doesn't prevent anyone from being second or third, and so on.

But most copycats can't produce overnight. Reverse engineering of the product, creating drawings, and making tooling takes months during which the entrepreneur can solidify his or her position, and sell.

The inventor's risk of competition starts with the publication of a patent and continues for about 18 years. Any person or organization can challenge an issued patent by legal means, or by making and selling the inventor's invention as it is described in his or her patent.

The inventor can then sue to prevent such an infringer from continuing to make and sell the invention. However, unethical companies understand that most independent inventors do not have the finances to win in court.



Inventors create a product and search for a market. For entrepreneurs, a gap in the market is more important than the product.

The Moon's the limit

Here's a true story of how one entrepreneur made more than \$1 million (equivalent to about \$5 million in today's economy) on one product.

Gerardo Joffe, a mining engineer in South America, decided to move to the United States. He found a job in New York City as a stock trader but dreamed of having his own business. He was fascinated with mail order and decided to try it. Many of the products he sold made money and many did not, but overall Gerardo made a comfortable living.

One day he came upon a small windup shaver made in Monaco. He bought one, tested it, and was pleased with the close shave it gave. He sold several and believed that the Monaco shaver had considerable potential.

He contacted its manufacturer and offered to buy a thousand every three months if he could become the sole distributor in the United States. A contract was signed. He advertised it and sold 200,000 over the next few years.

Then, to his surprise, he received a phone call from NASA, which had been testing the Monaco shaver for the astronauts' use on their journey to the moon. He got permission to use the NASA logo in his ads and sold almost a million "Moon Shavers" before the novelty wore off.

The Moon Shaver sold for \$24.95 plus \$6.95 if you added a trimmer attachment. In today's

money, that would amount to about \$125 to \$160 per order.

Joffe was one of the most successful mail order sellers of his day, if not the most successful. He wasn't the first in the market.

Abercrombie & Fitch had been selling a small number of shavers before Joffe entered the market. But he was the first to sell only by mail order.

He eliminated competition by getting legal protection in the form of a contract to become the exclusive distributor in the United States. And he created highly effective advertising by obtaining NASA's permission to use their logo. The name he gave it, the Moon Shaver, attracted attention and greatly increased sales.

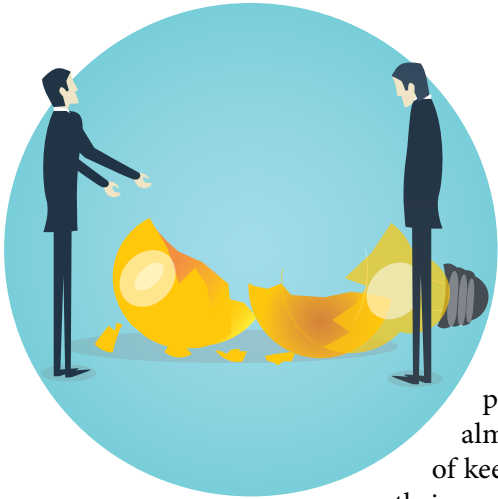
I met Joffe at his office in San Francisco in 1979. He had come across my self-published book on resumé writing and job search, liked it, and contacted me.

We agreed on a deal, and he placed a large ad in the *Wall Street Journal*. Unfortunately for both of us, it was a flop.

Accepting failure

So, what is to be learned about entrepreneurship at this point? Entrepreneurs love the adventure of searching for a product gap, not a specific product, and filling that gap.

Sometimes they discover a product that defines its own gap. Either way, they gain satisfaction



The entrepreneur routinely deals with the possibility of failure. The inventor may be devastated by it.

from the process of successfully marketing the right product at the right time. Their love is for the total process, and profit is almost incidental—a way of keeping score that proves their venture’s success. Certainly they must make money in order to live, but they must make it their own way.

But what about failure? How does the entrepreneur react to failure, such as the flop of marketing my book?

They accept failure as an *entrepreneurial tactic*. As one entrepreneur—I don’t recall his

name—told me in my late teens, before my first serious venture: “Out of five ventures, two will be utter failures, two will break even or maybe make a few bucks, and one will succeed. That one pays off all of your losses and may make you rich.”

So, the entrepreneur must have the stomach for failure and perceive it as an essential element of a holistic success process.

Perhaps equally important, the entrepreneur must be continually searching for the next product gap. Just as Gerardo Joffe’s Moon Shaver eventually lost its luster, so will virtually all products have their day in the sun and fade. We can only delay the inevitable competition, or the fickleness of our once-eager customers.

We might say that inventors and entrepreneurs dream the same dream. Both hope to bring products to consumers who will receive benefits from such products.

The inventor begins with a vision of the product he or she must pursue, whereas the entrepreneur pursues an indefinite product in anticipation of its *eventual* definition.

The entrepreneur routinely deals with the possibility of failure. The inventor may be devastated by it.

And so it goes. The inventor often has a solution in search of a problem. The entrepreneur often has a problem in search of a solution. Fortunately, there is usually enough entrepreneur in the inventor, and enough inventor in the entrepreneur, that each can succeed and enrich civilization. As Winston Churchill said:

“Success is not final, failure is not fatal. It is the courage to continue that counts.” 📌

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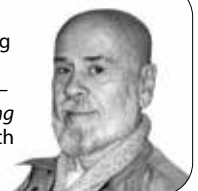


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Jack Lander, a near legend in the inventing community, has been writing for *Inventors Digest* for 24 years. His latest book is *Marketing Your Invention—A Complete Guide to Licensing, Producing and Selling Your Invention*. You can reach him at jack@inventor-mentor.com.



7 STEPS for Selling to Stores

Do you dream of selling your invention on retail shelves but don't know where to start? Check out these seven steps to help move toward your goal.

1 Make a list of where you want to be. The more retail locations you're in, the more product you are likely to sell. Start by creating your dream list of retailers. Then create a second list of other types of retailers that would be a good fit for your invention. Common examples are grocery stores, home stores, drug stores and hardware stores.

2 Gather intel. Visit different types of stores to take pictures of the aisles and competitive products. When a buyer sees your product, will its packaging and price fit in the aisle? Retail buyers know that consumers make their split-second purchase decisions based on packaging, so make sure both the design and configuration of your packaging are just right for retail.

3 Start small. In general, the smaller the retail chain, the easier the sell. Smaller chains have flexibility in ways that the big chains don't, and their lead times are shorter. You can make money faster with smaller stores as you work to get your product into retail giants such as Target and Walmart.

4 Join your trade community. You can learn an enormous amount about how to sell your product by educating yourself on your category. Who are the key vendors and retailers? Subscribe to trade publications, attend trade shows, and exhibit at trade shows. It's important that retail buyers and sales rep firms become familiar with you.

5 Hire sales representatives. Their retail relationships and geographic coverage can help you sell into countless retailers. Plus, they work on commission, so they don't get paid until you do!

6 Every sale matters. Build a track record of success to add to your buyer meeting message. The more retail stores you successfully sell to, the more comfortable buyers will be placing your products on their shelves.

7 Be patient. Success often comes after multiple buyer meetings. Oftentimes buyers need to get familiar with you and your products before they are ready to buy. So the sooner you start, the better!

Consumer Goods Growth Strategist Cathy Parks, creator of the PARKS Method, helped Barbie become a billion-dollar megabrand and now helps inventors and emerging brands successfully sell to retail stores.

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PART 3 OF 3: PODCASTS

A Savvy Disruption

AUDIO ENTERTAINMENT SERVICE FOR KIDS IS A CASE STUDY IN INVENTING, PODCASTING AND USING SOCIAL MEDIA

BY ELIZABETH BREEDLOVE

THE PODCAST MARKET was valued at \$9.28 billion in 2019 and increased as we moved into 2020. The children's podcast industry grew even more during the pandemic: With kids using screens for remote learning, parents began to seek other ways to engage their children.

Pinna is an audio entertainment service designed for kids. The streaming service offers podcasts, stories, music and other audio content specifically created and curated for children 3-12. This subscription service offers hundreds of hours and thousands of episodes of audio content for kids on a variety of subjects—all served in an ad-free, safe browsing environment with age-appropriate content.

The New York-based company partners with respected children's brands to create content, as well as producing original programming under the Pinna Originals brand.

I recently spoke with Maggie McGuire, CEO of Pinna. She spent more than 20 years working for large media companies such as Nickelodeon and Scholastic; before that she was an English language arts and history teacher.

Pinna's recent success can teach entrepreneurs why podcasts are becoming increasingly relevant, how to launch a new product or a successful business, how to use social media to promote your product, and much more.

Filling a gap

McGuire said that even with more than 750,000 podcasts now in the marketplace, Pinna's creators saw an opportunity.

"No one entity was producing podcasts at scale for kids," she said. "Pinna saw this gap in the marketplace and believed there was room for more audio in a kid's day, and believed

podcasts provided room for a tremendous amount of innovation and experimentation when it comes to kids.

"The audio renaissance—with the emergence of smart speakers, smart cars, smart homes and voice-directed technologies—has accelerated the growth of the overall audio and podcast marketplace."

The COVID-19 pandemic left no industry untouched as the world's screen time increased. Pinna was able to lean into this disruption to grow its business.

Because the product does not rely on screens, "kids can be active while they're listening," McGuire said. "While listening to audio, kids are hands free and heads up so kids can move, cook, draw, play and listen on the go."

When schools went remote across the United States last March, "we realized we needed to make Pinna easy for teachers to share with students who were learning at home. So we launched the ability for teacher subscribers to be able to share a free class code with their students so they could log into the Pinna service remotely and listen independently to our ever-growing catalog of podcasts and audio stories during the school day.

"Additionally, consumers searching for screen time alternatives have turned to Pinna."

Many convenience features

Pinna's content for students from pre-kindergarten through sixth grade promotes listening, vocabulary and comprehension skills; models language fluency and expression; develops motivation to read; makes books and stories accessible to all learners; helps narrow the achievement gap, and supports early literacy instructions. The service includes features designed with remote education in mind:

- Teachers can get six months of the service free, and students can access their class account for free during the school day.
- Teachers can create playlists for each student.
- Students can listen to content as a class or individually.
- Some content includes resources for teachers to use, such as activity sheets.

“Pinna continues to be seen as a leader in the kids audio marketplace and is the leading producer of original podcasts for kids,” McGuire said. “We have won numerous awards for both our listening platform and app as well as for our individual podcasts, including a Peabody Award for our podcast “The Unexplainable Disappearance of Mars Patel” in partnership with Gen-Z Media.”

The company launched its 42nd podcast during the second week of March 2021 and rolls out new content daily. “Today, two years after launching, Pinna is being listened to in 144 countries and counting. The average Pinna subscriber listens to Pinna programming for approximately 65 minutes a day. That’s over seven hours a week.”

Social presence

Pinna uses social media heavily, with great success.

“We actively engage our audience across a wide variety of social channels and meet consumers where they are,” McGuire said. “Moms, teachers and caregivers who subscribe to Pinna have huge influence in their peer groups on social media, and virally spread the word about our product ... we’re honored.”

The service uses Instagram, Facebook and Twitter to reach parents and educators and provide more information about what it offers and how to subscribe. Pinna does an especially good job of repurposing content by sharing it across each platform but tweaking it to make it fit the platform’s typical audience.

For example, it may share the same photo on all three of its social media pages—but on Facebook it includes a link directing traffic to the Pinna website; on Instagram it uses many relevant hashtags; and on Twitter the content stays short and sweet.



Pinna is an example of how podcasts are increasingly relevant, and how to innovate for a specific audience as market conditions change.

The Pinna team also supplements each platform with additional content wherever it’s relevant. For example, on Twitter the team retweets those talking about or mentioning Pinna. On Instagram, Pinna uses stories for additional content such as highlighting parents and teachers using Pinna, or offering suggestions for how to help kids get the most out of the streaming content.

McGuire offered advice for anyone looking to create podcasts specifically for child audiences.

“Talk to kids, play with kids, spend time with kids, and make sure you test your ideas with the kids you aim to appeal to in your podcast.” 🎧

Elizabeth Breedlove is a freelance marketing consultant and copywriter. She has helped start-ups and small businesses launch new products and inventions via social media, blogging, email marketing and more.



These Shoes Are Made for **TALKING**



MOM INVENTS BABY SHOE WITH CHALKBOARD SOLES
THAT YOU CAN WRITE ON **BY EDITH G. TOLCHIN**

BOY, throw a first-time granny loose and she'll find—and often buy—the newest and coolest baby inventions! This granny is no exception.

Chalkboard Shoes by Baby Says, created by Angela Yeakim of Columbia, Maryland, come in moccasins, sneakers, and feature some exciting kit options.

Edith G. Tolchin (EGT): How did your invention come about?

Angela Yeakim (AY): I'm married and have two sweet daughters. This is my first invention, and the idea came to me when my youngest was an infant.

My older daughter wanted to play and thought her baby sister was too boring! So, while she drew something on her mini chalkboard and placed it on the baby's feet I thought, wouldn't it be fun to have a chalkboard sole on her baby shoes to write fun messages? This way, the older sibling

can interact with her new sister in a safe way and they can start bonding.

I created a prototype with materials in the house. My older daughter had a blast!

I started with fabric chalk paint on the bottom of a pair of her shoes, but that just wasn't smooth. Then the "peel and stick" chalkboard didn't stick well at all. After I started working with chalkboard fabric, I realized this was it.

EGT: So tell us how your final product works.

AY: Baby Chalkboard Shoes have a soft, chalkboard-like outer sole. You can write on the surface with our safe, non-toxic, water-based chalk markers. They don't smear once dry (unlike regular chalk that smears everywhere), so it doesn't leave a mess.

Take as many photos as you'd like and share these new memories with friends and family. Once you are ready for a new message or design, simply wipe off with liquid dish soap and water, which then leaves you with a clean slate. These Baby Chalkboard Shoes kits are a great gift for new parents because they can be personalized over and over again.

They are a unique item that is sure to spark new conversations, especially when you let your baby's feet do all the talking. It's great for pregnancy announcements, gender reveals, baby announcements, holidays, milestone

"I tried hard to find a United States-based manufacturer but was stunned to find out that 99 percent of all baby shoes are actually made in factories overseas." —ANGELA YEAKIM





photography, sporting events ... the possibilities are truly endless. It's a fantastic way to get the entire family involved for some fun times!

EGT: What are the components? Fabrics? Sizes and age ranges?

AY: The baby shoes come in two styles: moccasins (PU leather) and sneakers (canvas). Each style comes in four colors.

Each style/color combo comes in four sizes: 0-3 months (Size 0); 3-6 months (Size 1); 6-9 months (Size 2) and 9-12 months (Size 3).

EGT: Where are you manufacturing? If overseas, please share any obstacles you found.

AY: We had this first run made in China. I tried hard to find a United States-based manufacturer but was stunned to find out that 99 percent of all baby shoes are actually made in factories overseas.

I didn't believe this at first, so I contacted the local SBDC (Small Business Development Center). They connected me with someone who was in the shoe industry for decades. He was quick to assure me that unless I have my own factory, I had to go overseas.

I was hoping I could find *something* in the States so I might visit the factory and talk to the folks in person, so the process might be smoother and more timely. However, that wasn't the case.

In dealing with the factory in China, there were language barriers, and a lot of time was lost with the back-and-forth until they got the product just right. Each time they tweaked the sample, it took three weeks to create it and another month to arrive. The shipment also got delayed because of a super typhoon in that area (of course it would!).

It took almost 3 years to get the product in the U.S. and ready to be sold. It was definitely a labor of love!

EGT: Because this is a children's product, what type of Consumer Product Safety Improvement Act (CPSIA) testing and certifications are you doing for your production runs?

AY: We had the baby shoes and markers go through all required tests to ensure they are safe for babies from lead and choking hazards. Because I had two little ones at home, I wanted to ensure that what I was creating for other parents was something I would definitely use on my children.

Parents can be assured that the liquid chalk markers are safe, non-toxic and water based. The shoes are also free from any components that could be deemed unsafe for babies.

EGT: Are you selling strictly from your website, or other retail outlets?

Baby Chalkboard Shoes have a soft, chalkboard-like outer sole. You can write on the surface with safe, non-toxic, water-based chalk markers that do not smear when dry.

AY: Primarily from BabySays.com, but I'm also running sales on BradsDeals.com, Jane.com, Zulily, Amazon. I have also sold to Bump Boxes, The Market @ Macy's and am in the process of filling out paperwork to sell with other retailers. COVID-19 really slowed down brick-and-mortar stores, so I am trying to focus on customers who are shopping online.

EGT: Please share your experience with patents.

AY: I had a provisional patent application and am working on getting a patent application approved.

EGT: Are you planning to add new products?

AY: Absolutely! I'd like to add other baby shoe styles, and onesies with a chalkboard surface. I'd also like to team with Build-a-Bear and have matching shoes for bear and baby. In fact, our Size 3 baby shoes fit many of these bears, so you can use the baby shoes after your baby has grown out of them.

EGT: What advice, if any, can you provide to readers who might be interested in developing an invention?

AY: Don't be your biggest obstacle. I tend to get in my own way! Just let go of all the "what ifs" and dive right in.

Have a great new idea? Do extensive research and see if it already exists. If it doesn't, roll up your sleeves and get to work. It's gonna be a wild ride! 🐾

Details: BabySays.com

Books by **Edie Tolchin** (egt@edietolchin.com) include "Fanny on Fire" (fannyonfire.com) and "Secrets of Successful Inventing." She has written for *Inventors Digest* since 2000. Edie has owned EGT Global Trading since 1997, assisting inventors with product safety issues and China manufacturing.



2 Critical Steps to getting your NEW PRODUCT "out there"

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CHOOSING THE TYPE OF PROTOTYPE FOR YOUR NEEDS

When working on a new product, you're always excited and can't wait to hold your idea in your hands. The first meeting with your idea in the physical world is usually done through prototyping. The rush and desire to start on your prototype is understandable. But first you need to decide what type of prototype you actually need. Knowing what you want to achieve with your prototype will help you to determine the right type that meets your needs. Here are the four main ones and their purposes.



PROOF OF CONCEPT

Proves that the product idea can be realized.

Used for approaching potential partners and investors.



MOCKUP

Helps to see the product's physical dimensions and its rough look.

Used for complex and large products, initial market research, early testing.



FUNCTIONAL

Represents visual and technical features of the product.

Used for testing functionality and conducting consumer surveys.



PRE-PRODUCTION

Allows for ergonomics, manufacturability, and material testing.

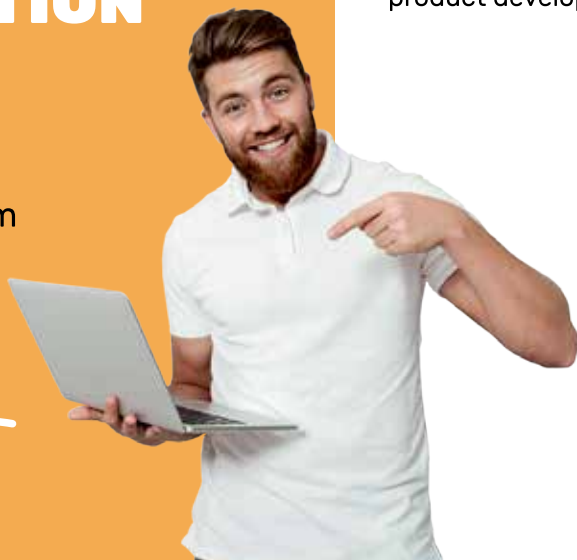
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FEW PEOPLE speak and think in several languages while building a career in the highly specialized industry of interpreting. Fardad Zabetian has innovated the technology that allows presidents, princes and parliaments worldwide to be able to speak with one another.

Zabetian has built a multilingual conference infrastructure through his videoconference and real-time interpretation platform, KUDO. Launched in 2017, the company has paved the way for enterprising businesses to globally interact.

The concentrated amount of highly influential people, dialogues, debates and arguments he has witnessed—and made possible—is staggering. The engagements and storied institutions involved include world and nuclear summits.

Most interesting, he has innovated how this occurs in a completely disruptive manner that has evolved this ultra-niche industry through the eons of its existence.

Ancient origins

The fascinating history of interpreting provides crucial context for appreciating the significant contributions Zabetian has made.

In days of old, kings kept interpreters by their side to whisper in their ear. Explorers brought interpreters with them to communicate with people they encountered and with whom they wished to trade.

But in 1945, when World War II ended, an extraordinary reconciliation process began with the Nuremberg trials. This birthed the world of multilingualism that is at the crux of Zabetian's world.

During this series of interactions, former Nazi leaders were tried as war criminals in the International Military Tribunal. As the Nazis took over many countries during the war, victims who spoke many languages were brought to the table and interpreters were needed to make the connection.

Fardad Zabetian launched KUDO in 2017. His company innovated technology that allows presidents, princes and parliaments worldwide to be able to speak with one another, and did it in a completely disruptive manner.

WORLD CONNECTOR

IN A REVOLUTIONIZED
BUSINESS CLIMATE,
FARDAD ZABETIAN LEADS
SURGING MULTILINGUAL
TELECONFERENCE PLATFORM

BY ALYSON DUTCH

For the linguistic industry, this was a heyday for those who spoke the needed languages. They were flown in from all over the world to do globally weighty work.

This time was an important evolution of international diplomacy within the United Nations. Its interpretation service was created to provide interpretation from and into many languages in the UN's New York City headquarters, and throughout the world for meetings such as the Nuremberg trials.

Shunning AI

"Interpreters are an incredibly intelligent and interesting group of polyglots," says Zabetian, who speaks English, Farsi and some German. *(Editor's note: Polyglots? See sidebar.)*

"At first this profession grew naturally as a result of revolutions and wars moving people around the world. But today, they (interpreters) are specialized academics and highly trained specifically, usually for very high-level global interactions.

"Researchers agree that in many situations, non-verbal cues can affect a vast majority of what's communicated."

—FARDAD ZABETIAN



“Interpreters can simultaneously translate in real time, which is a very special gift. I have spent my career providing the equipment they use and most recently, a huge change has occurred in the need for physicality, being replaced by video conference technology.”

What Zabetian has done has technologized this industry in an unprecedented way. More important, he has created a business model that includes the real-time interpreting skills of these actual talents—without artificial intelligence.

This was intentional.

“This is a time in history when one might expect AI to be the technology that does the actual interpretation,” he explains. “From my 20 years being up-close and personal with this process, in highly significant situations, I have learned that the human cognitive skill of making split-second determinations is crucial for success.

“Any institution or enterprise organization that conducts global business cannot afford the mistakes that could happen without a professional who can quickly determine considerations we call legality, fidelity and neutrality.”

Another thing AI cannot do is provide nuances of communication such as tone and body language. Zabetian built his company with this in mind.

“Researchers agree that in many situations, non-verbal cues can affect a vast majority of what’s communicated,” he says.

“On video, we can obtain visual cues from a person’s body language. This was missing in the booth infrastructure, where the interpreters were most often in another room and only connected by cables and earphones.”

100-plus languages

KUDO’s interpreters speak in more than 100 different languages. Zabetian provided another feature benefit created through KUDO: access to 147 sign languages.

Though nothing can replace the value of a physical meeting, Zabetian’s video conferencing platform has vertical drop-down menus from Albanian to Chinese, French to German. This year, he launched a self-serve scheduling

NOTABLE POLYGLOTS

Sigh. We wanted to define polyglot before providing you five A-Listers, but the world can’t seem to agree on what a polyglot is.

The first definition we saw was, “a person who knows and is able to use several languages.” Ianguages.org says a polyglot is “a person who speaks more than two languages, but used often for four languages or more.” Huh?

There is also a definition of a polyglot as someone who speaks five or more languages (about 1 percent of the world’s population). We’ll stick with that one because it’s easier and more impressive.

J.K. Rowling: We’re cheating already; the heralded “Harry Potter” author speaks four languages. Her mother was half French, so Joanne Kathleen spoke that language as a child. She picked up English and German in school and Portuguese during her travels to Portugal, also marrying a Portuguese man.



Roger Federer: The tennis star speaks Swiss French, Swiss German and Italian as a part of being a Swiss national. He also learned Swedish, as well as English because of all of his travels to America.



Audrey Hepburn: The late silver screen icon spent much of her childhood in the Netherlands, speaking English at home and Dutch everywhere else. She learned Spanish to help her acting career, later moving to Switzerland where she learned French and Italian.



Shakira: Born in Colombia where she learned her native Spanish, the superstar singer’s travels enabled her to also learn English, French, Italian, Arabic and Portuguese. Many of her social media posts are written in different languages.



Natalie Portman: The Academy Award-winning actress was born in Jerusalem. Acting in foreign-language films has played a role (no pun intended) in her learning Japanese, Spanish, German and Arabic, adding to English and her native Hebrew. — Reid Creager

platform called KUDO Marketplace that made it even easier to access the thousands of KUDO Pro Certified interpreters.

KUDO features instant feedback, screen sharing, document sharing, and live polls to make web conferences more efficient.

The company is headquartered in New York City, with other offices in London, Brussels and Geneva. Among its clients are the United Nations, World Bank, Council of Europe and myriad major enterprise companies that do business globally.

Although its clients in America, Europe, Asia and South America are mostly governmental institutions and enterprise business concerns, Zabetian says “now startups can afford to think globally from the very beginning, as it no longer requires full-time multilingual salespeople or product managers on staff and expensive travel to overcome language barriers.”

Due to the global reliance and acceptance of video conference technology, accelerated

during the pandemic, KUDO’s staff exploded in 2020 from 10 to more than 100. In a three-month span last year, the company’s usage increased from 16,000 minutes per month to about 500,000.

An engineer by education, Zabetian is a masterful “people person” with a talent for team building. “I know that ideas are only as good as the people who make them manifest.”

One of KUDO’s cofounders is a former chief interpreter of the United Nations, Ewandro Magalhães. He and Zabetian worked together in cities all over the world, with Zabetian setting up the equipment and Magalhães sourcing and assembling teams of qualified interpreters to do the work. Magalhães left the UN to pursue this startup.

KUDO’s other cofounder, Parham Akhavan, is a Silicon Valley engineering savant. Ironically for a technology architect, he thinks from the standpoint of product innovation—a coveted quality for any startup.

“I know that ideas are only as good as the people who make them manifest.” —FARDAD ZABETIAN



No competitors—yet

KUDO is a lone wolf in a very specific niche, with no direct competitors. This is exciting for Zabetian, but he is also well aware that this opens the door for others to come in with new tweaks and more money. As such he felt it was important to invest, grow and—most important—continue to innovate.

“At KUDO, we truly value each team member’s input, and we foster the approach of letting the best idea win,” he says. “It’s also important to consider how this idea sets KUDO apart from others.

“I am passionate about breaking down language barriers. I believe that the smartest and

most talented potential hires, greatest customers to acquire, and those lifelong business partners don’t necessarily need to speak my language.

“Every day, we serve as a connector for people worldwide. When businesses, thought leaders, innovators and creatives are able to develop ideas through collaboration, true progress happens. This means that our efforts make others’ dreams and opportunities limitless. I feel good about that.” 📍

Alyson Dutch has been a leading consumer packaged goods launch specialist for 30 years. She operates Malibu-based Brown + Dutch Public Relations and Consumer Product Events, and is a widely published author.



FARDAD ZABETIAN

Occupation: Cofounder and CEO, KUDO, Inc.

Born: Tehran, Iran

Home: New York City

Hobbies: Persian calligraphy, soccer, skiing, cycling, whatever sparks my children’s interest

Favorite book: “Monetizing Innovation,” by Madhavan Ramanujam and Georg Tacke

Favorite quote: “Hearing ‘no’ is the beginning of a negotiation.”

PHOTO BY DAGOMATIC PHOTOGRAPHY





CENTURY MARK FOR THIS REPORT IS TIME TO REFLECT ON PROTOTYPING, INNOVATION CHANGES SINCE 2013 —AND WHAT MAY BE AHEAD **BY JEREMY LOSAW**

I AM PROUD to say that this is the 100th edition of Prototyping.

The first was way back in 2013. It has been a joy to cover prototyping techniques, materials and tools that have hopefully helped readers to up their prototyping game. I have also been fortunate to take you along on my journeys around the world from the Consumer Electronics Show, Collision Conference, Startup Bus, LEGO Brickfest, Ecuador, Vietnam and the Dominican Republic to bring you awesome new innovations and my experiences along the way.

Instead of taking a trip down memory lane in its purest form, I want to instead reveal my thoughts on how prototyping and innovation have changed (or not) during those eight years and what is ahead.

Electronics

Of all the prototyping categories, electronics prototyping techniques and equipment has perhaps experienced the most change.

In 2013, I was still using the now massively outdated Basic Stamp microcontroller for prototyping work. It was what I learned in college.

Arduino has since taken over as the *de facto* microcontroller for inventors. It is easy to program, with the key feature its asymmetric stacking header footprint that allows you to add accessories, and the huge library of example code.

What really changed the game was the rise of IoT and wireless devices.

In the past five years, low-cost Bluetooth, WiFi and cellular modules have become readily available. Development boards are one-third the size of the Arduino Uno, and they can run many of the same libraries to control sensors and actuators that Arduinos use.

So it is now easy for people to develop web- and app-enabled devices with very little coding knowledge, thus democratizing IoT development.

IoT is great. But AI and machine learning are gaining traction. There are many Raspberry

Pi- sized boards that can run advanced algorithms to support artificial intelligence devices for driving electronics development for years to come.

Desktop manufacturing

This is a term given to tools and equipment such as 3D printers that can live and work in a small area.

There has been an explosion in powerful yet low-cost options in this space. There has never been a better time to be a prototyper; you can now turn your garage or spare room into a small factory.

The first and only 3D printer that I bought for myself was a Printrbot Pro. It cost nearly \$1,000 and came as a kit of laser-cut parts and electronics that I spread out across my kitchen floor and assembled in 10 hours. It is a fine printer and still works today.

Printrbot has since gone out of business, but there are a plethora of filament-style printers that are less than \$500 with material costing just \$20 per kilogram.

Another exciting development in 3D printers is the rise of resin-based 3D printing. Resin printers use a liquid that cures when exposed to UV light from the laser inside the machine.

This technology used to be only available to professionals in machines that had a \$100,000 sticker price and required a maintenance program. Now there is a range of high-quality options available, from a few thousand dollars to small, off-brand versions that are less than \$500 and easily fit on a desktop.

Desktop manufacturing is not limited to 3D printing. Machines such as laser cutters, routers and CNC mills have also been shrunk to bring these capabilities to the home inventor.

These machines allow for parts to be made from metals, wood and production-grade plastics that do not have the voids or structural issues that plague some 3D prints. Depending on the capabilities of a given machine, mills

and laser cutters suitable for the home inventor can be bought for a few hundred to a few thousand dollars.

What people are inventing

During the past 100 months, there has been a massive shift in the types of things people invent.

Back then, a lot of the development projects I worked on were purely mechanical in nature. If they did have electronics, they used simple parts such as motors, heaters and LEDs.

Now, nearly 75 percent of the development portfolio where I work at Charlotte-based Enventys Partners has electronics—and much of it has above-average complexity with advanced sensors and one or more types of wireless communication.

I believe there are three main drivers for this trend. One is that the technology is easier and cheaper to deploy and is therefore accessible to more applications.

The second is that data have become more valuable in certain applications than devices, which are just a vehicle to generate the data.

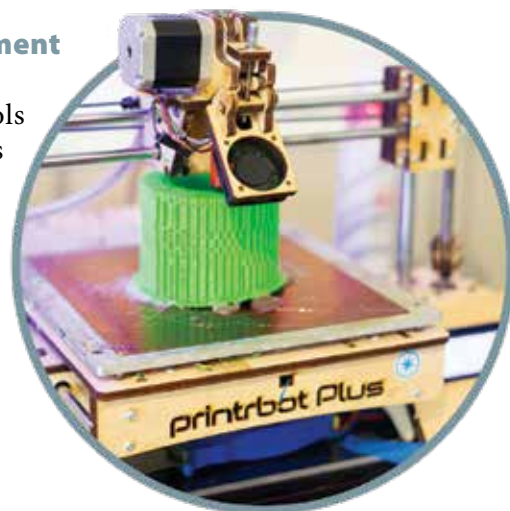
Finally, we have seen easier paths to launch these types of devices through platforms such as crowdfunding and the availability of angel funds, the latter demonstrated in the TV show “Shark Tank.”

This confluence of trends means inventors have been able to bring complex smart devices to market quickly and create massive value for their companies. It is harder to build value and create a wide customer base for purely mechanical products in a data-driven world.

Product development philosophy

As prototyping tools have evolved, so has my philosophy of how to turn prototypes into products.

My Printrbot Plus, despite its makery appearance, is still making great prints after eight years in service. 3D printers are one of many types of desktop manufacturing devices available on the market today.



The category of electronics prototyping techniques and equipment has perhaps experienced the most change.

Classifieds

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Whether your concern is how to get started, what to do next, sources for services, or whom to trust, I will guide you. I have helped thousands of inventors with my written advice, including more than nineteen years as a columnist for *Inventors Digest* magazine. And now I will work directly with you by phone, e-mail, or regular mail. No big up-front fees. My signed confidentiality agreement is a standard part of our working relationship. For details, see my web page:

www.inventor-mentor.com

Best wishes, Jack Lander

I have always believed that it is important to invest heavily into the discovery phases of a project and use materials and processes to support fast prototype iterations. These techniques never fail to generate good solutions to create the DNA of a product.

Where my thinking has evolved is when to launch the product and get feedback from customers.

Earlier in my career, I felt the design should stay behind closed doors until all details were worked out. However, now that crowdfunding has become an important launchpad, and seeing how early feedback from potential customers is so valuable, I believe in a more Goldilocks approach to product development.

In other words, enough engineering effort should be put into a product to make people believe that it is real and looks the part, and no more. It should be "just right" so that early feedback can be garnered without expending the massive effort it takes to work out all the details—which may be time spent to build features that no one wants.

The future

With the amazing developments in prototyping tech during the past 100 months, I am hopeful for even more great breakthroughs and evolution in the next 100.

My big wish is for 3D printing speed to approach the velocity of innovation, as it is currently still too slow for fast, iterative prototyping. I want parts in minutes, not hours.

I am also looking forward to seeing how AI and augmented reality enhance both the product development process and the types of products we create. However, no matter what new gizmos make it into the prototyping shop, nothing will ever supplant passion and purposeful learning to develop your prototyping skills. 🧠

Jeremy Losaw is a freelance writer and engineering manager for Enventys. He was the 1994 Searles Middle School Geography Bee Champion. He blogs at blog.edisonnation.com/category/prototyping/.



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Want a Publicist? Timing is Everything

TO MAX OUT COVERAGE FOR YOUR INVENTION,
UNDERSTAND WHAT PR IS—AND ISN'T **BY ALYSON DUTCH**

I CAN'T TELL you how many times our PR company has received calls from a company that is a month away from a launch—or, worse yet, just launched and needing a publicity campaign.

PR is often the first marketing method used for a product or service launch because it is so far-reaching, the objective reportage sets a credibility tone, and it can be very inexpensive. In the world of marketing methods, publicity also happens to be the No. 2 form of any marketing (word of mouth is No. 1).

Publicity can be many things, but a feature that makes it particularly valuable is the art of persuading media to report about something objectively without bias or payment. A good publicist will shape stories around a product and choose the right press that is seen, heard or listened to by your customer.

What publicity is not: Publicists are often highly skilled storytellers who have relationships with reporters. Those relationships, however, do not usurp the necessity of a newsworthy story.

What is a story?

Talking about what a company does, makes or how it made something red that was blue in the past is not a story. If a company is the first to market to solve a problem, that may be newsworthy. A story is finding a trend or way that this product is solving a problem that is already covered by the media.

Match trends with stories

Publicity takes time. At first, a good publicist will research your company and industry and pick out trends in the marketplace that match.

For a global meeting conference software that has a dropdown menu for 100-plus languages, one story is about global business challenges.

There may also be a story about how the founders who are immigrants brought their international knowledge to the marketplace.

Other stories are based around their business: Who are their clients that appeal to reporters being pitched? Are their clients such impressive names that it's surprising they became clients in the first year of business? If yes, that's definitely a very important story.

The next thing a publicist will do is write press kit materials that present the story in a way he or she knows the media will understand. In most cases, this writing is very different from corporate writing. It's not written in jargon and vernacular; it's written in a way that tells a story.

Using the same example above, KUDO (featured on Page 30 in this month's *Inventors Digest*) is a company that brings together thousands of interpreters who speak hundreds of languages with the videoconference dropdown menu software mentioned earlier.

There are some incredible stories behind the development of this software that are rare and interesting. The company's cofounders have been the main figures that make interpretation happen in some of the biggest global meetings in the world. One of them was a chief interpreter for the United Nations!

These are the stories a publicist needs to tell.

Counterintuitive factors

More about timing: When a product or service is new, the more innovative it is, the longer it often takes to get the media to notice.

It also takes longer to get traction for a customer. This seems counterintuitive, but trust me on this.

Humans are followers. They need to see that someone else is doing or saying something before they notice it—let alone buy it.

The press is the same. (This is even more illogical because in essence, news is, well, new. Trust me on this as well.)

A publicist is there to make noise. Without this, it's like having a party and forgetting to send invitations. Who can you expect to show up?

A good publicist will shape different stories and send them to the same reporters many times, often before a reporter will finally say: "Hmmm, that's interesting. I've been seeing your press releases and pitches. I finally have something in my news cycle that's a fit."

I call this the "Oh, yeah, I've heard of this" syndrome.

The PR timeline

So, at what point should you hire a publicist?

One should hire six months before a launch. If your product is in a known industry and something that has a big celebrity/VIP/killer client track record attached—making it far easier to get media coverage—three months will suffice.

You should plan for publicity to actually land when the product is available to buy. This is ideally 3-6 months after the pitching begins.

The first month of a publicity engagement is

usually spent writing materials such as fact sheets, historical backgrounders, executive bios, timelines, creation of infographics and press releases.

Press releases are important. If a PR outlet tells you that press releases are dead, do not make the hire. If you do, don't expect that organization to be able to get your company publicized in a way that matches what you need for your business.

A publicist will write the materials and then go back and forth with the client for approvals and polish. If you're lucky, this might be three weeks.

Then the first press release goes out with lists the publicist thoughtfully prepares to match a company's business goals. The pitching begins, which is the lion's share of effort a publicist expends every day.

A talented publicist will shape these stories for every single reporter to whom he or she delivers a pitch. You may think that a tech story is just for tech reporters, but the way a tech reporter at the *Wall Street Journal* reports varies from the way *Business Insider* or the Associated Press reports.

Always make sure you have rock-solid agreements about what you expect in that time, in writing. This is where relationships really are necessary. 📁

Humans are followers. They need to see that someone else is doing or saying something before they notice it—let alone buy it. The press is the same.





Cautious Hope

IP RIGHTS AREN'T SLOWING VACCINES' AVAILABILITY;
NEW USPTO DIRECTOR WILL BE KEY TO PATENT ELIGIBILITY

BY LOUIS CARBONNEAU

YOU MAY RECALL numerous doomsday prophets warning that the pharmaceutical companies developing COVID-19 vaccines would hide behind patent laws to limit availability to the masses. However, the hiccups we have witnessed have been mostly around production ramp-up—and the decentralized nature of distribution (and eligibility factors) that has been badly planned by numerous governments.

So, IP rights have not been a reason someone may not receive his or her dose—at least, not for now. Plus, there are enough individual vaccines approved to avoid any kind of monopolistic tactic, should anyone be tempted to try.

At the same time, and precisely because of the presence of patent rights, various governments around the world bought doses at a price that justified the massive R&D efforts required in the first place without any guarantee of success.

A world of interest

Other recent developments:

At the international level, we are seeing efforts in Europe to clarify rules of engagement around Standard Essential Patents (SEP) in order to bring some predictability within the process. ...

In China, we witnessed an enormous uptick in new patents filed locally by Chinese nationals—often of dubious quality—because of generous subsidies to do so. The government finally announced it will end those by 2025. ...

In the United States, we still await word of who will be the successor to United States Patent and Trademark Office Director Andrei Iancu. (USPTO Commissioner for Patents Drew Hirshfeld is currently performing the functions of director.) In parallel, the battle for clarity regarding patent eligibility continues to rage.

The Supreme Court has had close to 20 opportunities to help guide the lower courts with how to handle its *Alice* decision and yet has refused to do so. (*Editor's note:* The 2014 ruling in *Alice Corp. v. CLS Bank* was a devastating blow to software patents.)

I am not holding my breath, but I am more than willing to be pleasantly surprised with a group of new judges who were not part of the initial decision and may want to make a name for themselves.

Until then, we are still in a kill zone: The United States Court of Appeals for the Federal Circuit recently reiterated that it does not wish to follow guidelines set by the USPTO involving

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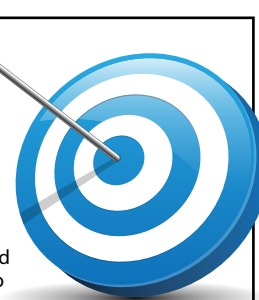
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The battle for clarity regarding patent eligibility continues to rage. Until then, we are still in a kill zone.

patent eligibility—leaving inventors to rely on one approach to obtain a patent and a different one to maintain the same patent in force.

To be very clear, this is complete nonsense!

Filings data a good sign

We have commented recently on the fact that NPEs, always the canary in the coal mine regarding the health of the patent market, had increased their activities significantly. (*Editor's note:* An NPE or non-practicing entity is one that holds a patent without the intention of developing it.)

“Activity” in this scenario generally means filing more cases in court, as we unfortunately still live in a world where an infringer has no real incentive to come to the table and negotiate a reasonable license. In the current version of the playbook, an infringer must first try every trick at its disposal, all generously endowed by our legal system.

But defensive aggregator RPX recently published a well-researched article on this subject, showing historic trends of patent court filings by both NPEs and operating companies during the past 15 years. The verdict is that yes, NPEs are filing more cases, but only recently have we seen an uptick in new cases.

One can make the case that NPEs got their mojo back when Justice Alan Albright was named in the Western District of Texas last year and decided that he wanted his court to hear more patent cases.

In a sense, it is very encouraging for patent owners to see that a single judge sitting in Texas can have such a direct impact to help even the playing field. At the same time, it is very scary that such progress must rely so heavily on one individual who set out to push a different agenda, just as it has been sometimes painful these past years watching Director Iancu try to steer the ship in a different direction by his objurgations and sheer perseverance against the interests of a very well-entrenched group.

If we have learned one thing recently with federal politics, it is that whomever is newly appointed to the job can rapidly undo the work of his or her predecessor with the strike of a pen. In our case, this kind of new balance in some U.S. courts—much needed and welcome to give inventors a fair shake against infringers—remains on very fragile ground.

A more permanent solution, coming from both Congress and SCOTUS, will be required to bring long-term stability and predictability in a system that too many have come to distrust. ☎

Louis Carbonneau is the founder & CEO of Tangible IP, a leading IP strategic advisory and patent brokerage firm, with more than 2,500 patents sold. He is also an attorney who has been voted as one of the world's leading IP strategists for the past seven years. He writes a regular column read by more than 12,000 IP professionals.





Revisiting an **IDEA**

INDUSTRY GROUPS URGE QUICK PASSAGE OF ACT THAT WOULD ALLOW COLLECTION OF DEMOGRAPHIC DATA **BY EILEEN MCDERMOTT**

All Eye on Washington stories initially appeared on IPWatchdog.com.

U.S. REPS. Nydia Velázquez (D-N.Y.) and Steve Stivers (R-Ohio), along with U.S. Sens. Mazie Hirono (D-Hawaii) and Thom Tillis (R-N.C.), have reintroduced the Inventor Diversity for Economic Advancement Act (IDEA Act) before Congress.

The proposed legislation seeks to direct the United States Patent and Trademark Office “to collect demographic data—including gender, race, military or veteran status, and income level, among others—from patent applicants on a voluntary basis.”

Sens. Chris Coons (D-Del.) and Patrick Leahy (D-VT.) are co-sponsors of the legislation.

The bill was first presented in July 2019, following an introduction by U.S. Rep. Steve Chabot (R-Ohio) of the Study of Underrepresented Classes Chasing Engineering and Science

(SUCCESS) Act in 2018. That bill asked the USPTO, “in consultation with the Administrator of the Small Business Administration, to study and provide recommendations to promote the participation of women, minorities, and veterans in entrepreneurship activities and the patent system.”

A key finding of that study was that there isn’t enough publicly available data to guide and support legislation that will foster inclusive innovation. This inspired the IDEA Act.

‘Help drive economic growth’

According to a press release issued March 9, the bill also would require the USPTO “to issue reports on the data collected and make the data available to the public, thereby allowing outside researchers to conduct their own analyses and offer insights into the various patent gaps in our society.”

“This bill will make the U.S. patent system more equitable and allow more women, people

“This bill will make the U.S. patent system more equitable and allow more women, people of color, and other disadvantaged groups to develop their inventions.”

—NYDIA VELÁZQUEZ, CHAIRWOMAN OF THE HOUSE SMALL BUSINESS COMMITTEE



of color, and other disadvantaged groups to develop their inventions,” said Velázquez, chairwoman of the House Small Business Committee. “By making the patent process more inclusive, we will help drive economic growth and elevate communities hurt by long-standing discriminatory barriers.”

As recently discussed during the USPTO’s Women’s Entrepreneurship Symposium, only 22 percent of all U.S. patents list a woman as an inventor and women only make up 13 percent of all inventors, said Tillis.

“We must work to close this gap to ensure all Americans have the opportunity to innovate, and I am proud to reintroduce this bipartisan, bicameral legislation to get a better understanding of the background of individuals who apply for patents with the USPTO.”

The press release also noted that African-American and Hispanic college graduates apply for patents at approximately half the rate of their white counterparts.

Supportive comments

Several groups quickly issued statements applauding the reintroduction.

Innovation Alliance Executive Director Brian Pomper said:

“The USPTO currently does not have the authority to collect any demographic information from inventors applying for patents, and as a result we have an incomplete picture of the patent diversity gap ... Breaking down barriers to patenting in underrepresented communities would help these inventors gain access to venture capital and other financing, allowing them to

expand research and development and more easily bring their innovations to market.” Pomper added that the Senate and House should “take up and pass the IDEA Act as soon as possible.”

Intellectual Property Owners Association Executive Director Jessica Landacre said that “collecting data is crucial for measuring progress toward greater inclusion of all under-represented groups in the patent system.”

Invent Together Executive Director Holly Fechner called the bill “a crucial step toward ensuring that our nation’s inventors have equal access to our innovation ecosystem, regardless of gender, race, or income” and commended the sponsors for “shining a light” on the issue. A statement issued by Invent Together also noted that an economist under consideration by President Biden for the Federal Reserve Board has indicated that diversity gaps “could cost the U.S. up to 2.7 percent of GDP.”

Biotechnology Innovation Organization President and CEO Dr. Michelle McMurry Heath said the bill “is vital to giving us a clear picture of where we are and what needs to be done to move forward, and encouraged “its swift enactment.”

Eileen McDermott is editor-in-chief at IPWatchdog.com. A veteran IP and legal journalist, Eileen has held editorial and managerial positions at several publications and industry organizations since she entered the field more than a decade ago.



IoT Corner

Plans to stage an augmented reality launch of the new Williams Formula 1 race car for the 2021 season were scrapped after hackers gained control of the app in an undisclosed security breach.

The app was designed to allow fans at home to see a full-size virtual version of the new F1 contender, with its new paint scheme, ahead of the 2021 season-opening race in Bahrain. However, the AR app was removed from Google Play and iTunes stores just before the official launch, forcing the team to instead release images via social media.

F1 car launches are typically glamorous affairs that can only be attended by the ultra rich or those close to the team. This was the first time it was to be done with AR, to essentially allow the whole world to attend.

—Jeremy Losaw



Wunderkinds

As **Pranavh Joshua Vallabhaneni**

and his family prepared for the arrival of Pranavh's baby brother, his parents shopped for car sets. That's when the sophomore at Unionville High School in

Kennett Square, Pennsylvania, remembered

the tragic stories about babies being accidentally left in hot cars. He invented the Baby Saver—Hot Car Alert Device, which transmits automated alerts to parents and local authorities when the temperature inside a car passes certain highs. At the 2020 Invention Convention Nationals competition, Pranavh finished first among ninth-graders and won first place for the safety award.



What IS that?

Or a better question: Who doesn't want a swimsuit that shows our inner body organs? One commenter on Amazon said she is 5 feet 8, 140 lbs., and the swimsuit fit perfectly. Just a little inside tip.

80 Age of the woman believed to be the oldest to be awarded a technology patent. On Dec. 1, 2020, Carole Sumner Krechman received her first patent, which creates a foundational change in how we communicate by delivering video to any cellphone on demand.

WHAT DO YOU KNOW?

1 The earliest known patent law in the world was enacted in which century?

A) 1400s B) 1500s C) 1700s D) 1800s

2 Which company was granted more patents in 2020—Google, or Sony?

3 **True or false:** People creating a football-related product are in trademark violation if they use an NFL player's number.

4 **True or false:** The Beatles' iconic dropped-T logo, which first appeared on Ringo Starr's drums in 1963, was not trademarked until the early 1990s.

5 Which legendary singer received a patent for a sash window mechanism?

A) Johnny Mathis B) Kate Smith
C) Lou Rawls D) Bing Crosby



ANSWERS: 1.A. The Venetian Patent Statute of March 19, 1474, was the first statutory patent system in Europe. 2. Sony 2,239; Google 1,817. 3. False. The number of a player can be used, but not the player's name. 4. True. Ivor Arbiter of London designed the logo on a scrap of paper with the capital B and dropped T to emphasize the word "beat." The logo was trademarked by Apple Corps. 5.D

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