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MAKING THE MOST OF MEXICO'S DIGITAL OPPORTUNITY

Technological transformation requires collaboration and innovation in education and business

BY TIM WILSON

The world is going digital, and this is creating immense opportunity for developing nations that embrace technological innovation. One excellent example is Mexico, which has already experienced the 'leap frog' effect, wherein high wireless adoption rates, along with a boom in internet access, have transformed business and consumer culture. Now, the Latin American giant is ready to fully embrace the digital age.

But going digital is a much more complex proposal than something as straightforward as smartphone adoption and internet access. It is not a jump ahead, so much as a long-term process of economic and technological transformation. There are many aspects to this digital frontier, not the least of which is having the know-how to deliver on faster product cycles within a diversified economy, and to support the applications that will power the Internet of Things (IoT).

Training the required human resources – in both private and public educational institutions, as well as on the job – is critical if an economy is going to meet the demands of the digital age. This is an area where Mexico is facing challenges but also showing real promise, helping to lead the way in what is now a global phenomenon.

A digital world

The specifics of Mexico's approach to digital innovation, and the role that the private and public sectors are playing, must first be set against the global reality. For Mexico to succeed in the digital economy, it must do more than leverage its proximity to the United States, a favorable exchange rate, and the benefits of NAFTA: it must also prove that it can compete on the global stage.

Global technology research for International Data Corporation (IDC) predicts that in 2019 the demand for digital-related services will account for over 70% of all external services growth, and 40% of total worldwide services spending. This is specifically due to shifting sets of competencies, and limits on talent pools. Performance gaps are exacerbated by difficulties in combining IT and business skills, as well as skills concentrations within geographic areas, which result in labor scarcity and wage inflation.

Within this worldwide digital shift, underlying economic assumptions are being redefined, with less emphasis on return on investment (ROI) and an increased focus on return on assets (ROA), including human and information-based assets. Digital commerce is connecting business processes in more seamless, end-to-end configurations. These are either replacing, optimizing, or simply augmenting the human experience. This transformation is extending to the manufacturing floor, with factories and tools connected by networks that combine processes, often from cloud-based computing platforms, to achieve tighter cost control, faster changeovers, and better overall outcomes.

The Mexican response

Over the past three years, global enterprise spending and investment in digital-related services has been the fastest-growing segment of the services market. As business leaders express interest in seeking out and realizing the value that digital can bring to their customers, products, and operations, the Mexican market has responded with innovative training stratagems within both companies and colleges.

A digital education

Mexico, like many OECD (Organization for Economic Co-operation and Development) countries, has a well-established tradition of formal education in the so-called 'STEM' disciplines of science, technology, engineering, and mathematics.

While the country has numerous well-respected universities and colleges offering degree programs in critical areas such as computer science and electrical engineering, market demand for skilled workers is expanding this paradigm to include more dynamic learning environments, with a faster turn-around, and a greater focus on hands-on learning experiences. This response is often coming from smaller private colleges, many of them with government ties and industry connections. These nimble organizations are able to develop specific talent requirements that have been ignored in the traditional Mexican academic spectrum, and that business is having a hard time defining.

"There are IT companies looking for people, but it can be hard to understand their needs,"
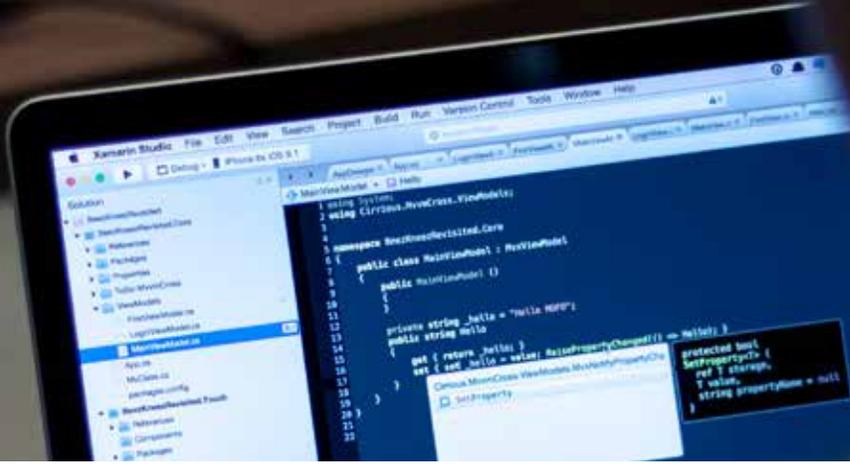
says Jorge Villalobos, CEO of 3DMX, Inc., a technology company headquartered in Silicon Valley that focuses, through its Mexico-based University of Advanced Technologies (UNIAT), on education and training programs in digital and advanced manufacturing technologies. "They talk about talent, but often can't pinpoint their requirements. The other side of the coin is those companies that rely on technology, but don't have it as a core competency. For example, they may want to improve their supply chain, but have no idea how to do it."

That puts an added burden on an educational institution, as it is expected to do more than churn out engineers and people with generic IT skills. Instead, a school needs to know where the digital economy is heading, and train people who are ready to come up with prioritized solutions in real-world business scenarios, and who also have the right communication skills. This is much more than writing code: it includes product development skills that involve making ideas tangible via technology.

"The challenge with the approach of a traditional university is that their classes often don't match theory with practical application," says Jorge Rivera, board member of UNIAT, which has four campuses in Mexico, including two in Guadalajara – one of which includes a high end manufacturing training lab. "UNIAT is taking the right approach in that it has been focusing on small niche markets that could explode for Mexico."

UNIAT is not only a technology school where young people can get an education; it is also as a source of talent for is parent company, 3DMX, which is making the transition from being an outsourcing organization to one that leverages its own intellectual property.

"We started the university because we didn't have the talent," says Villalobos. "We have the best teachers – they all work in the industry. With 700 students in Guadalajara, we are still small and dynamic. We can quickly put together programs that would require a slow process for a larger university, or that might be too risky for them."

Mexico's Telecom Transformation

In Mexico, telecom reforms enacted in 2013 have brought increased competition, and have lowered prices for consumers – including the eradication of domestic and international long-distance and roaming charges. Although annual inflation in Mexico stood at 2.6% in March 2016, prices for telecommunication services were down 11.3% from the previous 12 months. As well, the number of mobile phone internet users in Mexico was estimated to have reached 60.3 million in 2016, up 12.9% from 2015, while internet users total 70.7 million, up 8.6%.

The UNIAT board has taken the decision to grow in two critical areas that respond to industry needs: high-end manufacturing, and information technology. Computer graphics is a critical area of focus, given that it has relevance well beyond media. 3D modeling is a central component of the digital age, with multi-industry applications in areas such as engineering, manufacturing, and medicine.

"How we address training for high-end manufacturing is a good example," says Villalobos. "The equipment is expensive – a CNC machine costs over US$100,000. But we can use the skills developed in our own studio to create simulators, and we can take that online. When the students are ready, they can then jump into the hands-on class."

This is an excellent example of where digital transformation, skills demand, and an innovative approach to education are creating a perfect storm, wherein Mexico will be able to address the demand for highly skilled workers in a cost-effective manner. Part of this cultural shift is happening within the younger demographic, too, which now thinks in more practical terms.

"We want our students to think of the return they are getting on their investment in money and time," says Villalobos. "We sell our program in 3D modelling for architecture and industrial design by telling our students how much the market is paying for those skills."

Partnering with business

Private enterprise has a critical role to play in training STEM workers in Mexico, and the country is beginning to see a move toward a more active stance on the part of individual companies.

UNIAT, for example, has Board representation from several large multinational technology firms, with instructors who are actively employed in the tech sector. Many students even have their own businesses. This represents a major shift for Mexico where, as in many OECD countries, the private sector has tended to rely

on traditional external educational institutions to develop talent, with little understanding of how they might participate. But that is changing – UNIAT is by no means the only example – in part because the Mexican business and IT culture is now participating on the global stage.

"When we got started we reached out to Google," says Manuel Morato, Co-founder of Dev.F, a software development school in Mexico City. "They had some initiatives to combine technology with education. Our proposal made a lot of sense to them, and they provided a venue for us to get started."

Dev.F has continued to work closely with the private sector in order to understand how best to develop talent. The school has held classes on sponsored campus locations, and maintains collaborative relationships wherein companies act as venue partners, though it has now matured to where it has its own campus. Over half of its students receive some sort of financial aid in the form of scholarships directly from companies.

"The companies that provide scholarships have access to the community of developers working on school projects, or for recruitment," says Morato. "These partners also provide mentors, and offer field trips to their offices."

The Dev.F educational model is radically different from that found in a traditional college or university. The company has White Belt, Red Belt, and Black Belt programs. Each belt level is only two months in duration, with the Black Belt program having four paths: back-end web; front-end web; Android for mobile; and iOS for mobile.

"Universities are teaching technology, but not in a manner that reflects what companies want in terms of skills and knowledge," says Morato. "The result is that some tech companies are taking the matter into their own hands and teaching the skills themselves."

Building a training culture

Within individual businesses around the world, the emphasis is increasingly on using technology to solve specific problems in novel ways. This is where the modern digital worker in Mexico is acting as a disruptive force, because he or she is able to deliver value in areas that might otherwise be invisible to management.

Innovative companies in Mexico are actively looking for, and developing, talent that embraces proactive problem solving, as opposed to a simple task-based approach to work.

"I don't need coders – I need people beyond that, with a solution mindset," says Guillermo Ortega, co-founder and COO of iTexico, which is headquartered in Austin, Texas, and has a regional office in Silicon Valley, as well as a wholly owned software development and delivery center in Guadalajara. "You can identify those minds. They're more analytical, and more oriented to software engineering."

Often, a young worker will be predisposed to the kind of thinking that supports proactive problem solving; however, this is also something that can be developed over time. ITexico has embraced a continuous learning model, wherein training is built in to the company culture. The company utilizes formal seminars, has a strong relationship with the University of Guadalajara, and is partnering with a local high school for a six month training program for software development and engineering, which in turn will help iTexico learn how to improve course materials. The challenge is to determine a new employee's core competencies.

"Some fresh graduates will need coaching and hand holding," says Ortega. "This is not low cost. You need to invest in the talent. Even experienced developers need to be challenged all the time, because the technology is changing dynamically."

iTexico is also promoting initiatives from the Chamber of Commerce in Guadalajara, which is recognizing those companies that train employees to support the larger tech ecosystem. This requires a change in mindset to one that sees training as part of a larger, positive phenomenon that improves employee retention. For those employees that do move on, the training only strengthens the overall labor market.

"We've trained about 150 people since 2012, and some of them now work for our competitors, but we take the view that with more people in the market, the more we all grow," says Ortega. "Training is part of the solution to a global labor shortage; fortunately, Guadalajara remains a great place to find talent, because so many people study engineering here."

Taking an active approach to assessing, acquiring, and growing talent is critical, but not sufficient in itself – the modern digital enterprise in Mexico must also take a broader view of human resource development. Many Mexican companies are reluctant to give raises, and use currency fluctuations to their advantage. But this kind of "old school" thinking – in which management limits the personal development of the employee base – ultimately hinders growth.

"We think it makes sense financially to train and invest, but others see that as pampering," says Dr. Matt Pasienski, Head of Growth and Co-founder of Wizeline, a San Francisco-headquartered AI chatbot developer with a campus in Guadalajara. "We give regular raises to keep on top of the market, and are willing to compete hard for talent. We don't think you can take a passive approach to talent. We are very aggressive about how we train people."

Wizeline has created its own AI academy, which offers tuition-free coursework on artificial intelligence and machine learning from its Guadalajara campus. There are two course tracks, the Machine Learning Intensive and the Data Science Intensive. The AI Academy also offers weekend crash courses for students wanting baseline familiarity with data science, natural language processing (NLP) and chatbots.

This is all being done within a very specific understanding of and expected explosion in demand for employees with AI capabilities, as well as the broader requirements of the modern digital worker.

"We have a strong opinion on what makes an effective digital worker," says Dr. Pasienski. "It is all about ownership – as equity, but also ownership of projects. It helps people to be more creative, which is critical to software engineering. This isn't about developing people who want to be told what to do. You need to understand the problem, and own the problem, before you start doing things. It isn't a factory mentality."

Rapid skills acquisition

The examples from UNIAT and Dev.F are good indications of how Mexico is addressing a very real global problem: four and five year university programs cannot meet the practical requirements for digital workers in a timely manner. The systems are too bureaucratic, and cannot pivot to meet the changing demand profile of the digital enterprise. The good news is that a young, motivated, and creative population – as is found in Mexico – is ready to adapt and capitalize on the emergent opportunities. Furthermore, Mexican organizations are shifting to optimize training and skills development to suit both the populace and the market.

Six months to programming at Dev.F

The Dev.F programming school in Mexico City has an effective, three stage model to rapid IT skills development. Each stage is only two months in length, and is open to people of all ages and backgrounds.

White Belt: Beginner

Requirements: None.
Curricula: HTML, CSS, Java Script, programming logic (variables, arrays, methods, functions).
Ability: Basic web design

Red Belt: Intermediate

Requirements: Basic web skills, some programming
Curricula: Data structures, algorithms
Ability: Can build a broader application that connects to a database.

Black Belt: Advanced

Requirements: Programming knowledge, and a desire to learn new technologies, or
Curricula: One of four areas: front end web; back end web; Android for mobile; iOS for mobile.
Ability: Advanced skills in one of four paths.

"The best new approach to learning is what I call 'snackization'", says Ortega from iTexico. "This involves delivering small knowledge 'snacks', because keeping a young person's attention can be a challenge. That's the real hurdle, not the technical stuff."

That's also the approach taken by some of Mexico's innovative new educational organizations. Dev.F, for example, can deliver an IT education eight times faster than a university, with a student paying only five percent of what they would for a full degree. Upon completion, eighty percent of those looking for work in their field find employment.

"We offer discounts as our students continue to the next level," says Morato from Dev.F. "Often

businesses provide scholarships that cover the full price of tuition, but we always want to have the students assume some of the cost, so as to motivate them."

A longer education tenure also increases the opportunity costs, as the students are usually unable to work full-time to defer their tuition. And a shorter, more targeted education has the advantage of reflecting real-world scenarios, wherein product development cycles themselves are faster and more specific.

"If you have a limited amount of resources to develop a prototype, and only a two-week window, the development process has to reflect that," says Villalobos from UNIAT. "This is why Google is so successful – they are committed

to fast cycles. It is also why one of our most successful programs is for Android, as well as iOS, because people can put together B2C apps overnight."

An educational model should also reflect the reality that a lot of products are developed with proprietary software. With this in mind, UNIAT functions as an Autodesk Authorized Training Center, with programming certification in a range of technologies such as the CUDA API model (NVIDIA), Unreal Engine (Epic Games), and the Unity technologies game engine, as well as ZBrush (Pixologic) and Renderman (Pixar) for more advanced students.

It should be noted, too, that a school like UNIAT builds on scalable education methods and processes, with sequential testing to ensure that no student is left behind. Blended courses combine self-paced, asynchronous online work with hands-on lab experience. This is a flexible approach based on a proven curriculum, developed by industry, that is offered both online and onsite.

Finding the right stuff

Despite some of the innovative approaches to training being taken by educators and business people in Mexico, the country is nonetheless facing the same challenges experienced by more mature economies. This is because companies large and small, from around the world, expect technologists to understand their business and to approach them with solutions.

"I was on a panel with the CIO of a large multinational," says Villalobos from UNIAT. "He said that every time he sat down with a potential IT or services vendor, and they would ask "What can we do for you?" he was out the door. Mexican companies, like companies all over the world, need to know their clients and expand their service expertise."

However, achieving this means delivering on real skills and capabilities. Mexican technology companies are seeing strong demand growth for JavaScript, as well as .NET, and technologies related to business intelligence (BI). There is also a growing need for workers with a deep understanding of data structures, either as

business analysts or data scientists. The market is so strong in these and other areas that many potential employers are willing to turn a blind eye to education and certification – it's the skills, and the attitude, that count.

"If someone comes to me and they can code, it's okay if they're self-taught," says Dr. Pasienski from Wizeline. "We're looking for people who want to be challenged. They don't need to be world experts in Java compiling, but domain knowledge in Android or iOS can matter."

It is now common for even large tech companies in Mexico to hire people based on raw skills and aptitude. Usually, a prospective candidate is subjected to a battery of tests for math and technical skills, as well as soft skills. From there, the right software developer can be groomed internally, particularly in support of rapid, low-code application development using microservices, APIs, and shared services.

Linking to demand

The Mexican demand profile for the digital economy tracks closely to that of its dominant trading partner, the United States, but Mexico has some unique characteristics that affect skills development. There is a heavier emphasis on fast product development for mobile devices and products with a media component. This ties in with the domestic trend in Mexico.

According to the Interactive Advertising Bureau Mexico (IAB México), smartphone ownership among internet users reached 74% in 2015. This is up 6% from 2014. By comparison, laptop ownership (67%) dropped 9%, and desktop ownership (42%) slipped 11%.

Mexico also has strong demand for niche embedded software in high-end manufacturing, specifically aerospace. Outside of straight BPO, Mexico exhibits less demand for higher-value software services to regulated industries such as healthcare and financial services.

As well, given the explosion in inexpensive endpoint devices, and the expected growth in IoT in the United States, Mexican developers will be called upon to write software that can address both internal and external threats to enterprise infrastructure and data.

"A lot of companies are putting a huge effort into staying up-to-date on cyber security," says Jorge Villalobos from UNIAT. "This is B2B. The challenge is that this requires a lot of coding in C++, but the clients often can't explain the specifics of their requirements."

This problem is not unique to Mexico, and ties in closely with what the analyst community is seeing on a global scale. IDC has noted that in 2018 approximately 75% of customers adopting IoT solutions will turn to outside firms for help. This assistance will cover everything from strategy, planning, and development, to implementation and management.

More specifically, individuals with both business and IT skills are currently in high demand, particularly in the context of analytics, coding, and managing projects to scale. Here is where the development of leadership skills is critical, given that there is strong demand for those who can work on major systems, and who can support large customer bases and surges in data traffic. Clearly, in the example of high-growth companies in the United States and elsewhere, access to a dynamic workforce is critical in order to fully benefit from digital transformation.

BPO and the path to digital

Within the private sector, talent development in Mexico is being supported by enlightened BPO providers, many of whom are offering young workers their first serious job. These companies are training young employees to be adept at providing service in English, while also providing supportive environments that encourage basic skills development. The role of BPO in establishing a training base is critical for any organization looking for a mature and trainable workforce.

"Our pitch to employees is human development," says Rudy Sanchez, Managing Partner at business process outsourcing (BPO) provider Beliveo, which has a 1,200 employees working out of a 540-seat facility in Guadalajara. "Our employee profile is typically between 21 and 23 years old, and college educated. We give them the opportunity to improve their English and develop negotiation skills."

Beliveo focusses on voice-based BPO, and initially hires candidates based on their English-language ability, with an intensive training period of about one month. The client will provide the training requirements, with Beliveo utilizing a well-developed nurturing phase as part of the transition.

"This is not a cut and paste of what the client tells us to implement – traditional instructor-based training would bore our candidates," says Sanchez. "If there are eighty scenarios, we'll focus on the 15-20 most common which represent the majority of calls."

At Beliveo, a trainee is taking calls in the second week. This is in a hands-on, supervised environment, with an eye to a successful transition – a critical period, as this is when most attrition concerns. After a successful transition, however, Beliveo has an employee base that is well suited to represent the client.

"We have written our own in-house call center management software, which has a lot of tools, and we use mobile technologies like iPads and Chromebooks on the floor," says Sanchez. "We are selling a service and our expertise, with one of our values being goodwill."

At present Beliveo's main focus is inbound billing – potentially a sensitive area for the client's customers. As a result, it is critical that employees be well-coached, and valued. The company has an "Employee Services" station that functions as a one-stop shop for queries or issues, as well as an infirmary and a multi-use activity space.

"For us, word of mouth is the biggest source of recruitment," says Sanchez. "We are aware that loyalty is conditional. We see our role as providing an important stepping stone in the industry."

This is a critical point, and one that is often overlooked when assessing how a country like Mexico might supply labor to the digital economy. For many Beliveo employees, this is their first job. They find themselves in an environment where there is quality-focused approach to BPO that moves beyond selling hours and seats, and includes data analytics and designing processes.

"A huge part of what we do is to give these young workers a confidence boost," says Sanchez. "Once they work for us, they realize the depth of the cultural affinity with the United States. They also see the importance of English, and how this is critical to advancing their careers."

Digital transformation – by the numbers

In 2015, **68%** of Mexican internet users ages 13 to 70 used their smartphone to go online, up from **62%** in 2014

Laptops were second with **58%**, down from **70%** during the same timeframe

Worldwide spending on digital transformation represents the **fastest-growing** spend category between **2016** and **2020**

While **16%** of applications are developed using agile today, respondents expect to grow this share to **24%** in the next three years

By the end of 2017, over **90%** of the **Fortune 500**, and over **70%** of **Global 500** (G500) enterprises, will have dedicated digital transformation/innovation teams

By 2018, **45%** of CIOs will focus on "platformization," which involves using DevOps for rapid development, cost reduction, and enterprise agility. In fact, **30%** of IT executives have already made DevOps part of their automation strategy

By 2019, **40%** of digital transformation initiatives will be supported by cognitive/AI capabilities

By 2019, **70%** of IT Organizations will be embracing agile practices and open source communities

By 2019, more than **50%** of the value of software will be monetized through "things" and consumer and business services – and most of that will come from developers outside the traditional software/IT industry

By 2020, **75%** of **Fortune 500** companies will be suppliers of digital services through industry collaborative clouds

By 2020, digital transformation teams will source over **80%** of their solution components from open source communities

Challenges & Opportunities

Mexico is at a turning point, in that it has all the necessary components to make the most of the digital age. But it also face challenges. Without an honest acknowledgement, and a strong response, much of the digital opportunity could be lost.

Challenges

Poor educational alignment. Mexico has many strong universities and technical colleges offering full degree programs in computer science and electrical engineering. However, these take four to five years to complete, and the institutions are overly bureaucratic. The result is that the curricula tend not to reflect the latest trends, and there is poor industry alignment, with the students receiving little in the way of hands on, real-world experience.

A solutions mindset. All the technical skills in the world are of little use if there is no understanding of how to help an organization achieve its goals. Domain and industry knowledge, as well as a willingness and an ability to be proactive in suggesting solutions, are critical to success in the modern digital economy.

Leave the training to others. Many Mexican companies still believe that they have little to no role to play in training their employees. They expect educational institutions to supply ready-made talent, and they expect skilled interns to work for little or no pay. They also have poor overall employee development skills, without standardized HR policies and reward systems. This is unsustainable, and is how talent is wasted. In Mexico, it is critical that a training culture develop across industries. Government can help here, but industry must be a partner.

Confidence. One of the advantages of having a large BPO sector as a feeder for talent is that it develops confidence, as well as basic computing and important soft skills. Young workers know they can function in English while serving the customers of large US-based clients, as well as handling relevant software interfaces. Experiencing this kind of success in a modern work environment is a huge boost for future

skills development. But many Mexican workers continue to lack confidence, which in turn hinders them from taking more proactive approaches to digital innovation. This is particularly acute at the middle management layer, where a passive approach to client engagement and a reluctance to embrace "responsible risk-taking" can be an issue.

Opportunities

Faster skills delivery. Mexico is a young country with a highly creative and motivated workforce. The populace responds well to rapid skills development cycles. Many young people are not candidates for advanced, full-degree programs at universities, yet are well positioned to make a positive contribution to the Mexican economy. There is an immense opportunity to leverage the base of both present and former BPO workers with intense, cost-effective, targeted training programs.

A niche approach. The digital economy is a broad phenomenon – it is touching almost every aspect of our lives – yet in Mexico there are niche opportunities, particularly in Web development (front and back end), mobile (Android / iOS), and graphics (media, design). These are areas where skills can be developed rapidly, and can tie in with industries in markets that have rapid product development cycles.

Don't sweat the certifications. Leading Mexican private sector employers interviewed for this report, including multinational and domestic technology firms, made it clear that it was no longer a strict requirement to hire people out of advanced degree programs or with vendor certification. This response may be due to necessity, but it has brought interesting results: the interviewees stated that some of their best employees are self-taught and /or internally trained.

Filling the gap. In Silicon Valley, talent is prohibitively expensive. Startups need access to an agile and affordable workforce that's close by, has cultural affinity, and that can deliver on fast turnarounds. This is what a nearshore operation out of a city like Guadalajara can offer – assuming that it can keep up the pace with skills development.

Mexico – a 'must' for US business

Utilizing skilled and reliable talent from Mexico has been – and will continue to be – an effective means for the US startup community to maintain its viability. This is partly because housing costs in Silicon Valley have risen dramatically in recent years, as have basic cost-of-living expense areas such as food and transportation. But it is also because Mexico offers a young, motivated, and highly-skilled workforce in close proximity to the US market.

"For many business cases this model is the only way for a US startup to survive," say Guillermo Ortega, co-founder and COO of iTexico. "As a binational company, we are enabling US business. This is not about Mexico selling services to the US. That's a simplistic way of looking at it. This is a business model that helps US businesses."

Given the ICT labor shortage and intense wage inflation in Silicon Valley, the nearshore delivery model is an effective – and in some cases, essential – means for a US business to execute quickly while ensuring the highest performance. "It is not just Google and Facebook that are looking for better, faster, more cost-effective execution in the digital economy – it is also companies like Kellogg and Nestle," says Manuel Morato, Co-founder of Dev.F, a software developer school in Mexico City. "They want to innovate the product development mindset, with shorter cycle times that generate data for them to assess how well they are executing."

Innovation in learning

In order to succeed in delivering relevant IT talent, and to meet the demand, educational institutions need to innovate. The dominant model, in which students take four or five years to student an advanced degree in computing or electrical engineering, is still relevant. However it is simply unable to meet the demands of a rapidly evolving digital economy.

Part of the challenge with traditional schools is that they are unable to provide asynchronous, online training. They are also bureaucratic and slow moving, with a management structure that hinders a dynamic approach to managing curricula, students, and faculty.

Demand Chart: Technical Skills

Skill	Demand Strength	Remunerative Value	Volume Requirement
Java	High	Mid	High
Javascript	High	High	Mid
Android	High	Mid	High
iOS	High	Mid	Mid
.NET	High	Mid	High
HTML	Mid	Low	High
C/C++	Mid	High	Low
OpenStack (Cloud)	Mid	High	Low
Apache Hadoop	Mid	High	Low
Apache Spark	Mid	High	Mid
PHP	Low	Mid	Low
Python	Low	Mid	Mid
Ruby	Low	Mid	Low
Oracle	Mid	Mid	Low
SQL Server	High	Mid	High
Machine Learning	High	High	Low
Analytics	High	High	Mid

Demand Chart: IT Job Description

Job Description	Demand Strength	Remunerative Value	Volume Requirement
Front-end Developer	High	Mid	High
Back-end Developer	High	High	Mid
Full Stack Javascript	Mid	High	Mid
Test Engineers	Mid	Mid	Mid
IT Support	Mid	Mid	Mid

Demand Chart: Soft Skills

Soft Skill	Demand Strength	Remunerative Value	Volume Requirement
English	High	Mid	High
Domain Expertise	Mid	High	Mid
Industry Expertise	Mid	High	Mid
Project Management	High	Mid	Low
Business Analysis	High	Mid	Mid

UNIAT's EDUSCORE management and online education delivery platform, which was developed by UNIAT's parent company, 3DMX, is one example of how a Mexican school is meeting the challenge. The platform functions as an effective tool for the management of student grades, schedules, and staff. It offers access to student files, and is used for signup and group admissions. It is also effective for financial management, providing access to admission income reports, faculty payroll, as well as online student service and payment collection.

The race is on

If there is one dominant trend that defines digital transformation, it is the ability to develop software faster and more efficiently. Software vendors, IT services companies, and larger enterprises are all embracing shorter release cycles.

It is anticipated that by 2018, as a result of increased reliance on digital transformation developer teams and DevOps, annual application releases will increase by 50%. This means that many software releases will be moving from a quarterly or semiannual basis to monthly, or even weekly or daily deployments. As a result, speed has become a core success determinant in the digital economy, with optimal skills development and deployment an important part of that equation.

In only a few years' time it is expected that most growing enterprises, no matter the industry, will become "digital native" with regard to how executives and employees think and operate.

Data Sources for Document: Interactive Advertising Bureau México (IAB México); The Competitive Intelligence Unit (CIU); Instituto Nacional de Estadística y Geografía (INEGI); Instituto Federal de Telecomunicaciones (IFT) – Mexico; International Data Corporation (IDC).

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Mexico IT is a partnership between the government and the private sector in order to raise the awareness of the Mexican IT industry as the most important nearshore provider.

No country is closer to the United States than Mexico, and benefits of working with the nation's many service providers include NAFTA-assured free trade, robust IP protection, human capital capabilities, and strong support from the government.

Clients should consider Mexico attractive because of this combination of factors that include competitive total cost of engagement, relatively lower risk and other business drivers as cultural alignment, short travel distance and same time zone.