



CERTNEXUS[®]

Taking the Wheel of Emerging Tech

Aligning your team's skills for a digital transformation journey



In 2022, the question of digital transformation isn't "if," or even "when," but "how" and potentially "when again."

Yet the landscape of digital transformation is rife with failure. According to BCG, only 30% of digital transformation projects achieve success.

Why?

Too often, business leaders pursue digital transformation from a reactionary place – in response to new regulations, more agile competitors, or plain old FOMO. They want to adopt the most powerful tech they can get their hands on as quickly as possible, with no firm plan for applying that tech to business outcomes.

Successful digital transformations have three things in common.

- Clear transformation goals

Transformation and technology can't do everything. The why, what, and how of your digital transformation strategy must be informed by specific, measurable business outcomes.

- Total alignment

From the C-suite to the floor of the company's hierarchy, everyone understands the initiative, the role they play in it, and how they stand to benefit from it.

- Proficient teams

Whether a business leader or stakeholder, product or project manager, or technical professional, each person possesses the knowledge and/or skills to add value and drive the project forward.

The technology commercially available today has more horsepower than ever before, from AI to machine learning to data science and beyond. But the human element will always remain central to its application and effectiveness.

When we talk about your digital transformation "journey," it's an apt analogy. The future state of your business is your destination, and your digital transformation is the vehicle that will deliver you there.

Everyone must play their role, whether they be passengers or drivers or mechanics.

In this white paper, we'll help you think about your organization's path forward and how to attain the knowledge and technical skills you need to keep your digital transformation on course.

Getting Your Passengers Onboard and Buckled Up



Digital transformation projects are no longer strictly IT projects. They require input and involvement from the C-Suite and heads of each business unit.

Business leaders are engaged passengers on your digital transformation journey.

Getting your Passengers prepared for the journey requires a fundamental knowledge of the possibilities and limits of the vehicle—that is, the technology.

What is the technology?

Artificial intelligence, machine learning, deep learning, big data. To the uninitiated, it all sounds very sci-fi. Indeed, the fundamental concept of AI is to engineer machines to make human-like decisions.

But AI has its limits. AI can't tell you what to do, from a business intelligence perspective. It must be trained and structured to provide specific insights that will inform your decisions.

Your passengers must know which insights provide the most value, and what types of data will inform those insights.

Applying the tech to business outcomes

What your passengers lack in tech knowledge, they should compensate with intimate knowledge of the business operation and strategy. They should know how the goals of each business unit contribute to the broader strategy.

No matter how advanced technology becomes, tech will always be a tactic. Your passengers need enough

tech vocabulary to realistically consider how the tech can meet the goals of the business.

Here are just a few examples:

- A grocery retailer wants to **increase basket size** per customer, so they implement a recommendation engine that suggests new products based on past purchase history.
- An oil company wants to **cut down on manual administrative tasks**, so it automates the collection of geological data.
- A bank wants to **increase customer retention**, so it uses a predictive algorithm to identify customers who may be about to switch to a competitor.

Understanding the ways AI can be applied will help your passengers communicate the mission of your digital transformation to the other stakeholders.

What makes a good passenger

With a general understanding of what the technology is, your stakeholders should be more prepared to have productive conversations about using technology to move the business forward.

Good Passengers have specific, agreed-upon goals for the business and its units.

Now it's time to get your digital transformation on the road.

Getting Behind the Wheel of Your Digital Transformation

Manager-level roles like project managers, product owners, leaders of data teams, and so forth are the drivers on your digital transformation journey.

These team members act as translators between business leaders and the engineers who work hands-on with the technology. For the engineers, Drivers can communicate the goals of the business, from a strategic perspective. For business leaders, Drivers can explain how technology can be used to achieve those goals, from a technical perspective.

A Driver's job is to align everyone to the same goals and expectations—the destination and the route you will take to get there.

AI, machine learning, deep learning, and data

Drivers need a deeper technical understanding than the Passengers.

They need to know the pros and cons of different approaches to machine learning and deep learning. They should understand the data lifecycle and how the tool will evolve over time.

Most importantly, Drivers should be able to articulate why and how a particular digital solution will facilitate the business goals. Drivers will need to communicate why their team is going about pursuing the project in a particular way.

The appropriateness of a particular solution depends on several factors.

- What types of data will you be working with?
- What data sources are available to the business?
- How much computational load can your infrastructure handle?

Developing a data ethics policy

The responsibility of being a good Driver falls to this managerial role. Behind the wheel of a car, there are written rules of the road that enforce safe driving. There are also unwritten rules of courtesy.

Data ethics address the moral element of gathering and employing data. It doesn't ask "can we?" but "should we?" In this area, some of the biggest companies in

the world have gotten it massively wrong and suffered severe reputational damage.

In formulating your data ethics policy, you must fully understand the rights that every individual possesses around their data – the rights of ownership, transparency, and privacy, to name a few.

Drivers must also understand the process of building an AI solution to avoid unethical outcomes. For instance, AI that unintentionally targets vulnerable populations or exhibits racial bias.

Many businesses think of data ethics as an obstacle, as red tape they have to finagle their way around, but a good data ethics policy offers myriad benefits to the business.

- Customers are more aware than ever of the ways they can be taken advantage of through technology. A commitment to the ethical use of technology can make a company stand out and appeal to customers.
- If the AI is biased or unethical, it will not deliver a clear, accurate picture of the business or industry landscape. As a result, you may chase the wrong opportunity or let the right opportunity slip by under the radar.
- As problems result from unethical tech and data practices, laws like the General Data Protection Regulation, the California Consumer Privacy Act, and the EU Artificial Intelligence Act are coming into place to protect consumers. Ethical data practices mitigate compliance risk.

Technology will continue to become more powerful and more synonymous with business strategy. It is vital to use this great power responsibly and ethically.

What makes a good Driver

At the end of the day, the best Drivers reach the right destination within a reasonable timeframe. The car arrives intact, and no one is hurt along the way.

When the time comes to take the next trip, they'll turn to you for a smooth ride.

Getting Under the Hood of Your Digital Transformation



There's one more role to fill in your digital transformation – the mechanic who makes your vehicle run. Mechanics are the technicians who will create and implement the technology for your business.

Roles like Data Scientists and Machine Learning Engineers will function as the Mechanics on your digital transformation journey. They ultimately own the data and development of AI-driven solutions.

The skills

While the passengers and drivers of your digital transformation need knowledge, Mechanics need hard skills to bring AI strategies to life.

Programming capabilities

The ability to use programming languages such as Python is a fundamental skill for Data Scientists and Machine Learning Engineers. Although not used in the traditional sense to develop applications, Python skills are used to wrangle and engineer data into usable models.

Ethical considerations

AI is built to reflect and learn from what it's given. In this way, bias and prejudice can be baked right into the very core of a tool. If an algorithm is trained with biased data, it will only amplify that bias as it learns. If those using the tool exhibit prejudicial preferences, the algorithm will reflect that prejudice in its future results.

A good mechanic can see these issues coming and implement guardrails that keep the AI on an ethical, effective course.

The ability to transform data into insights

The role of a data scientist is more consultative than prescriptive. Rarely will they receive the instruction to "Use x data and method y to determine z." More often, the question will be something like "How can we streamline our workflow to lower the cost of our work product by 10%?"

The Data Scientist must be able to translate this need into a data-driven solution. To do that, the scientist must understand the problem at hand, why it's important to solve it, what data is available to work with, and what outcomes are possible.

Ultimately, the data doesn't speak for itself. Data technicians act as both stewards and storytellers, interpreting the data into actionable insights.

What makes a good Mechanic

The best Mechanics have a unique blend of technical ability and business acumen. They're good communicators who are naturally curious.

Most importantly, they can keep your digital transformation firing on all cylinders.

Starting Your Engine

To recap:

- **Passengers (business leaders)** need a general understanding of the terminology and concepts, plus opportunities and limits of the technology. They are responsible for defining the goals of the business and the strategy around meeting those goals.
- **Drivers (project managers and product owners)** need to understand the business strategy, and possess a more practical grasp of how the technology may be applied toward that strategy. They are responsible for ensuring the strategy is translated to the technical application of your digital transformation.
- **Mechanics (Data Scientists and ML Engineers)** need to understand the how and why behind the business strategy, and the extent of the resources at their disposal. They are responsible for using their deep knowledge of the technology to construct AI and data-driven solutions that advance the business strategy.

Digital transformation only works when everyone is aligned to the future state of the business. When everyone has the knowledge they need from others, and has provided the knowledge that others need from them, you're ready to hit the road.

Articulating the application of the technology and applying it to specific business goals can be difficult. After all, plenty of digital transformation disasters were caused by intelligent people.

No one can know everything. But everyone needs to know enough to play their part.

So take stock.

- Who needs to be on board for your digital transformation? What are their goals that technology may help accelerate?
- Do you have the knowledge to direct the car, to align the business strategy with the technology?
- Are you confident in your Mechanics? Do they have the technical skills and business acumen to wield the technology toward specific and ethical ends?

Passengers need the knowledge to tell whether a particular vehicle is right for their purpose. It goes without saying that a good driver has a driver's license that proves their knowledge and ability. Real mechanics have a license that validates their technical ability to keep your car functioning safely and smoothly.

Certifications for transformation

So how do you educate yourself? You could browse the internet, listen to podcasts, and scour videos on YouTube. But you don't know what you don't know, and you won't, without a structured, scaffolded training program.

At CertNexus, we offer training and certifications in cybersecurity, internet of things (IoT), artificial intelligence, data science, and data ethics.

For Passengers and Drivers, we offer training that helps you understand the fundamentals of AI, data science, data ethics, cyber security, and IoT. These courses will empower you with the knowledge you need to create tangible strategies for employing these technologies within your organization.

The courses conclude with a final assessment that, with a passing score, rewards you with a micro-credential that shows you know your stuff.

For Mechanics, our intensive certification programs give you the skills to excel in any data-related job function, and implement ethical AI solutions in any business environment. These courses and certifications were developed by many of the top figures working in the world of data, artificial intelligence, and tech ethics, reflecting the skills most in-demand for data and AI practitioners.

Technology will only become more powerful and more accessible to businesses of all sizes and types. Those who excel in the digital transformation era will be the ones who can connect the right problems with the right solutions.

At CertNexus, we want to prepare you to do just that. To learn more, visit us at certnexus.com. Your digital transformation journey is waiting.



Credentials for Passengers & Drivers



Data Science For Business

DSBIZ offers business leaders, sales and marketing managers, project managers, and other stakeholders a streamlined course to help make decisions and drive organizational data science strategies. DSBIZ candidates will learn data science concepts, methods of use, challenges and benefits using relevant business examples.



Data Ethics For Business

DEBIZ is designed for business leaders and decision-makers, including C-level executives, project and product managers, HR leaders, Marketing and Sales leaders, and technical sales consultants, who have a vested interest in the representation of ethical values in technology solutions.



Artificial Intelligence For Business

AIBIZ offers business leaders, project managers, and other stakeholders with a streamlined course and associated credential to drive their AI strategy. AIBIZ candidates will learn AI concepts, approaches to machine learning and deep learning, fundamentals of AI implementations, and the impact of AI including business use cases.



Internet of Things For Business

IoT BIZ offers business leaders a streamlined course and associated credential to open collaboration and drive informed business decisions for their IoT strategy. IoT BIZ candidates will learn IoT terminology to understand the components of IoT infrastructure, uncover challenges for consideration, and discover the impact that IoT has on their organization.



Emerging Technologies For Business

ETBIZ is a combination of three CertNexus credentials (AIBIZ, DSBIZ, and IoT BIZ) which cover the most often used technologies to generate data, extract insights from data, and leverage data to predict future outcomes. Upon successful completion of this credentialing assessment candidates will earn the capstone ETBIZ credential and receive a badge which can be posted on social media platforms to identify your dedication to emerging technologies.



Certifications For Mechanics



Certified Data Science Practitioner (CDSP) develops knowledge, skills, and abilities required to answer questions by collecting, wrangling, and exploring data sets, applying statistical models and artificial-intelligence algorithms, to extract and communicate knowledge and insights.



Certified Artificial Intelligence Practitioner (CAIP) and the corresponding training program is designed for information technology practitioners entering the field of artificial intelligence who are seeking to build a vendor-neutral, cross-industry foundational knowledge of AI concepts, technologies, algorithms, and applications that will enable them to become a capable practitioner in a wide variety of AI-related job functions.



Certified Ethical Emerging Technologist™ (CEET) is designed for individuals seeking to demonstrate a vendor neutral, cross-industry, and multidisciplinary understanding of applied technology ethics that will enable them to navigate the processes by which ethical integrity may be upheld within emerging data-driven technology fields such as artificial intelligence (AI)/ machine learning, Internet of Things (IoT), and data science.



With Cyber Secure Coder (CSC), candidates will learn about vulnerabilities that undermine security, and how to identify and remediate them in projects. Also learn general strategies for dealing with security defects and misconfiguration, how to design software to deal with the human element in security, and how to incorporate security into all phases of development.

Our CyberSec First Responder (CFR) certification validates the knowledge and abilities to combat the changing threat landscape and protect critical information systems before, during, and after an incident. This course has been developed to ANSI/ISO/EIC 17024 standards and is approved by the U.S. Department of Defense to fulfill Directive 8570/8140 requirements.

Our Certified Internet of Things Practitioner (CIoTP) and Certified Internet of Things Security Practitioner (CIoTSP) are geared to give you a vendor-neutral, cross-industry skill set for implementing and managing a secure IoT ecosystem.