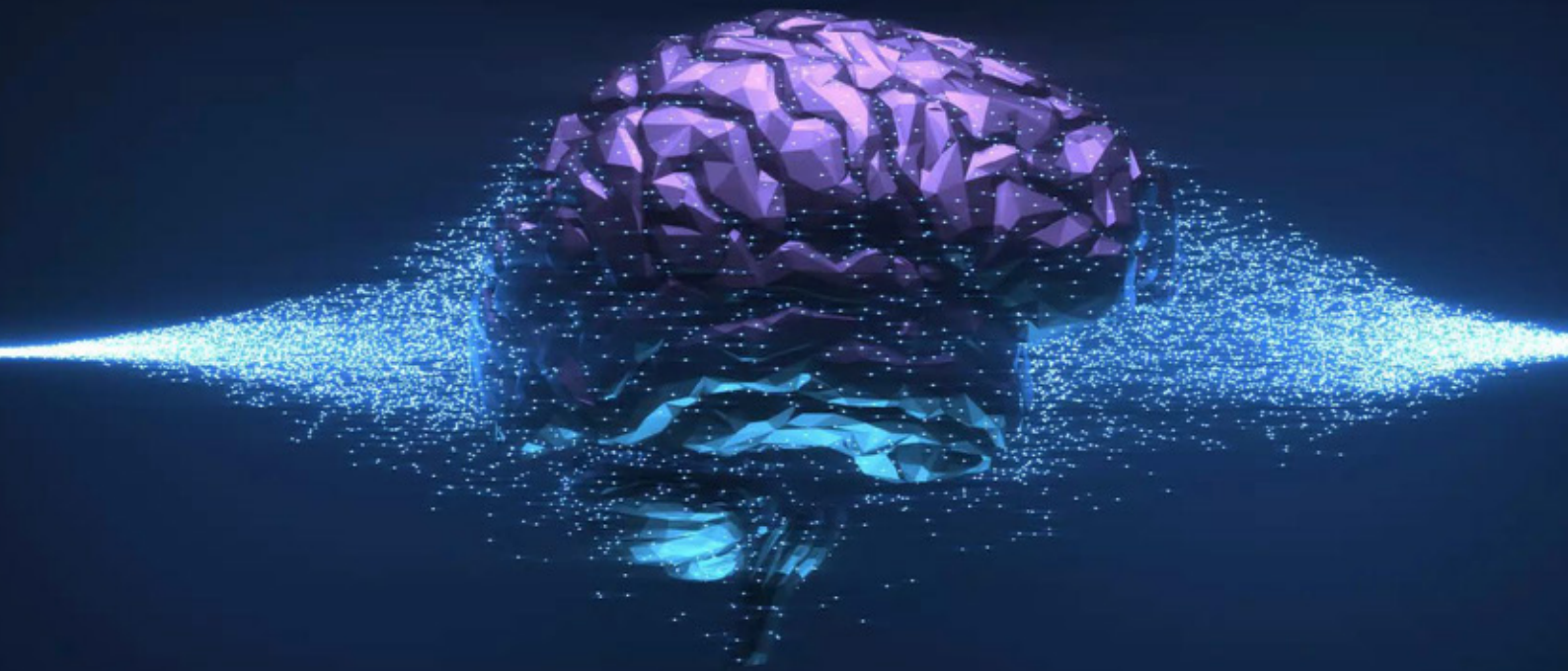


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EMBRACE AI NOW



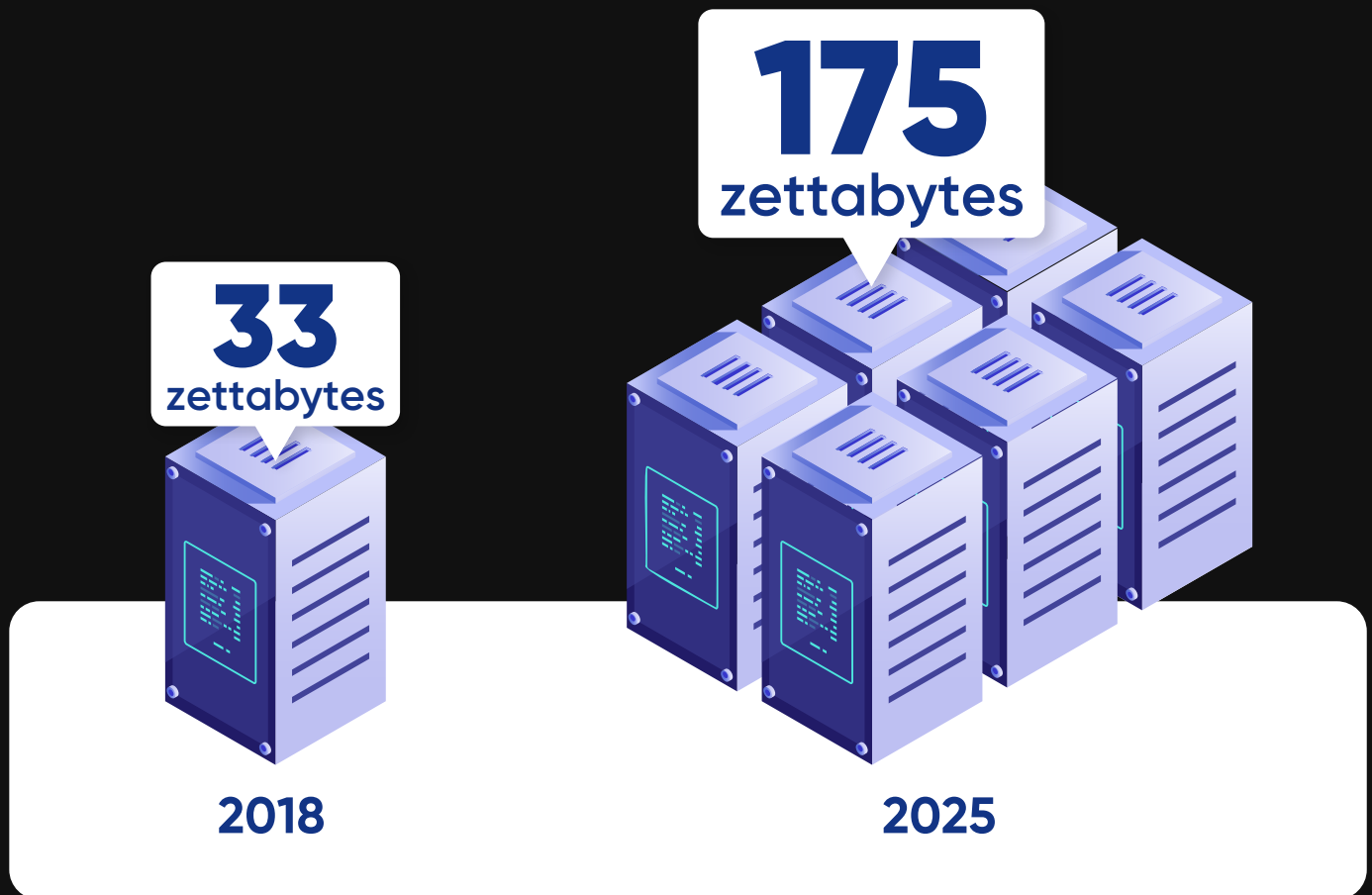
TECHNOLOGY ENABLES ENTERPRISES TO LEVERAGE LARGE VOLUMES OF CUSTOMER DATA FOR COMPETITIVE ADVANTAGE

Data has become the new corporate linchpin. Organizations collect more of it now than ever before, and data volumes keep increasing at astounding rates. But businesses need help transforming oodles of customer information into actionable insights. Enter Artificial Intelligence, which is rapidly becoming the cornerstone of sales, marketing, and customer service applications. One shortcoming is that few organizations are equipped to exploit the technology, so changes in business processes are needed as the technology is introduced. Here's how to make that transition.

AI solutions are much different than traditional marketing, sales, and customer service applications. Consequently, corporations need retool their operations in order to exploit.



THE DATA EXPLOSION



The process starts by acknowledging today's corporate linchpin: data. Enterprises generate mind boggling volumes of information.



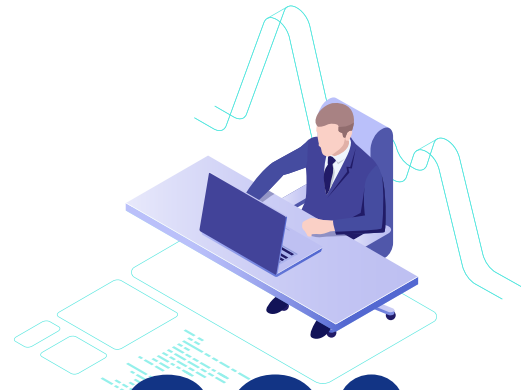
The world's data will grow from 33 zettabytes in 2018 to 175 zettabytes by 2025, a Compounded Annual Growth Rate (CAGR) of 61%, according to International Data Corp. (IDC).





>70%

of employees have access to information that they should not



80%

of analysts' time is spent simply discovering and preparing data

Gathering customer information is the only the first step in exploiting it. The reality is that information is strewn across the organization in different departments and stored in a hodgepodge manner. As a result, more than 70% of employees have access to information that they should not, and 80% of analysts' time is spent simply discovering and preparing data. Consequently, the first step that organization needs to take in order to exploit AI and machine learning capabilities is cleaning up their data.

Currently, customer data is stored in silos, spread across the organization. Information as simple a customer name and contact information is collected in a wide variety of ways, stored in a number of systems, and is essentially invisible to other departments. Furthermore, the security checks that control who and how those records are created, which employees access them, and who can update them is also done in a scattershot fashion. Rather than allowing information to languish in silos, companies need to create consistent data collection and management policies in order to realize AI's potential value, according to McKinsey.



LAY THE FOUNDATION

The **ODIN** strategy is one popular option to homogenize information.

O · D · I · N

**ORGANIZE
DATA**

(Identify the key
DNA of company's
data strategy)

**DEFINE DATA
MANAGEMENT
PROCESS**

(Cloud based,
Governance, Ethics,
Fairness AI,
Regulatory)

**REAL TIME
INFERENCE**

(Experimentation
at Scale)

**NUANCED
TUNING**

(Learning and
reorganizing Data
Strategy, Algorithms,
and processes
around business
models)

After data is unified with governance and controls, businesses then need tools capable of correlating the marketing, sales, and customer service information and gleaming trends. AI performs this function. As companies begin to deploy it, they must retool significant parts of their organization, an ambitious undertaking.

Let's start with the system infrastructure. Organizations need a different computing, storage, and network infrastructure. AI and machine learning solutions perform much differently than traditional applications and need specialized hardware. The company also has to decide whether to run the application in the cloud or on-premises, a choice made when stringent regulatory or security requirements are a concern.



DEPLOY AI IN DIFFERENT WAYS

Then, organization selects AI software, which is packaged in two ways. Vendors, like Google and Microsoft, market generic AI solutions. Here, the client takes the software and develops the sales, marketing, or sales application, just like building a corporate application on a Database Management System.

In addition, sales, marketing, and customer service suppliers, such as Salesforce, Hubspot, and FuseMachines, integrate AI features into their applications. This approach has become quite common: Deloitte found that 87% of corporations deploying AI do so in this manner.

Next, the enterprise needs AI experienced talent. Depending on the size of the company and its software selection, and business needs, they may require a wide range of experts: data analytics specialists, data scientists, data engineers, data product managers, and AI DevOps specialists.

Because the market is new, demand for these individuals outstrips supply. In fact, many companies find it challenging to build their own AI development and support team. Instead, the organization will rely on a third party to deploy and maintain the system.



CREATE A MASTERPIECE

Building the application requires new skills. Unlike traditional programs, AI solutions are interpretative. Data scientists create behavior models that illustrate the probability of future actions, such as what type of advertisement best influenced a purchase. Building and tuning the algorithm requires a mix of technical skills and industry knowledge. The technical skills focus on tuning the software and the infrastructure. The industry knowledge is key because the company must understand its customer persona in order to serve them more effectively.

Assembling all of the pieces does not ensure success. After all, they are tools, like a paintbrush and only produce art if the organization works together to create its own stunning mural. Enterprises often encounter challenges when adopting new technology.

Why? Individuals embrace routine and consistency, and AI disrupts that feeling. More importantly, it creates anxiety: the technology can replace jobs and forces individuals out of their comfort zone and learning new skills.

Management of AI projects often requires that enterprises break down traditional barriers, create cross-functional teams, and empower them to redefine existing procedures. Such dramatic changes only have a chance to succeed if top management drives the project.

Company culture was listed as the top (23%) barrier to AI adoption.



ACKNOWLEDGE AND ELIMINATE BIAS

AI relies heavily on mathematics and numbers but sometimes falls victim to bias. A touch of art is required when correlating and interpreting data. Corporations have to ensure that their decisions are grounded more in the system's findings than individual departments' agendas. They must institute data science best practices centered on data collection and reach real time inference and recommendations based on hypothesis testing and human in the loop algorithmic (and not personal preference) decisions. Working with an unbiased third party often provides the set of eyes needed to avoid institutional bias when interpreting causality.

NARROW YOUR FOCUS

AI is a broad horizontal technology that can be applied to any part of the customer experience. So, corporations need to establish clear objectives. Do not try to boil the ocean. In certain cases, companies tackle big issues, such as understanding the customer journey from beginning to end. Creating a long To Do list without a clear plan on how to get from the start to the finish will sap energy and resources and create frustration.

Instead, start small. History has proven that a better option is to pick a small project, one with clearly defined objectives. After you have success with it, you can extend it to other closely related pain points.



ESTABLISH A TIMELINE

Also, managers must recognize the potential benefits as well as limitations of AI. There are good use cases for AI and there are instances that lead you down a rabbit hole where you become lost in data possibilities. Perhaps, using a Robotic Process Automation to automate part of the customer order entry is a good place to start before engaging in more complex projects.

On a related note, set a reasonable timeframe. With AI generating so much buzz, managers sometimes expect to jump in and quickly produce significant results. Before a model is tested, a company has only a best guess as to what it will produce. Experimentation and learning are needed to fine tune the model. Consequently, AI often takes much longer than other digital initiatives, produces results falling within higher variable ranges, and has a wider variability of success and failure.



So how long should a project take?

58% of companies piloting AI projects say it took two or more years to reach the piloting phase, and only 28% of respondents reported getting past the planning stage in the first year, according to the 2017 Annual Enterprise Survey



To avoid getting lost in the prototype and POCs (Proof of Concept) stage, you need to:

1 ASK FOR REFERENCES:

One way to get a better picture of how AI can help your organization is talking to individuals at other organizations who are further down the implementation path. Peer insights provide a solid understand of what you are facing, one where the unvarnished truth is easier to discern than the marketing hype.

2 FINE TUNE THE DATA MODEL:

Another area where AI is different from traditional applications is the data model. The more data that a company collect, the more markers it has, and the more nuanced its results may become. Consequently, your model should evolve over time and become more useful.

3 CREATE AN AI CENTER OF EXCELLENCE:

Because AI is complex, large organizations create AI Centers of Excellence, groups within the company that help business units adopt the technology. Such groups often develop best practices that help to ensure organizational implementation consistency.



AI IN ACTION

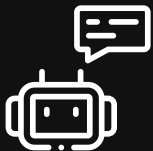
AI is ready to perform these tasks right now. In fact, a wait-and-see strategy could be a costly mistake, according to McKinsey Global Institute, which expects it to create \$1 trillion in profits by 2030. In fact, many companies have already begun AI projects. Gartner found that 30% of all B2B companies will employ some kind of AI to augment at least one of their primary sales processes in 2020. These solutions are having a profound impact on the organization:



AI solutions improve lead generation by 35% at least, according to the Harvard Business Review.



Organizations lower the cost per contact by as much as 83%, according to McKinsey & Co.






Chatbots increase sales by 67% on average.





Marketing, sales, and customer applications reached an important transition point. The maturity of AI and machine learning enable enterprises to rewrite legacy business processes, gain numerous efficiencies, and increase sales and customer satisfaction. Making the transition from the old to the new can be onerous. However, the work is worthwhile, positions a company for future success, and works if a company understands the challenges and takes steps to mitigate the potential problems.








TECHNOLOGY STACK (AI)

STACK	APPLICATIONS	PROVIDER	DETAILS
 PyTorch (Full fledged Platform for ML Tasks including Deep Learning)	End to End ML Capabilities including Deep learning in a distributed manner	Pytorch Community (Open Source) - Facebook	A full fledged end to end ML Framework (Distributed) used for Model training and productionizing including deep learning capabilities. Used by Major Enterprises with research capability and Leading Universities https://pytorch.org/features/
 PyTorch Lightning	A lightweight wrapper around Pytorch that makes usage of Pytorch much easier	https://www.pytorchlightning.ai/ (Open Source)	https://www.pytorchlightning.ai/ Lightweight automated framework on top of Pytorch to make ML accessible for end users
 TensorFlow	End to end ML Platform with Deep learning	Open source (https://www.tensorflow.org/) https://www.tensorflow.org/about/case-studies	Originally built by Google for abstracting out Complex ML tasks, Tensorflow is an end to end ML Framework that has deep research backing and used by various enterprises.



STACK	APPLICATIONS	PROVIDER	DETAILS
	<p>End to end ML framework with AutoML capabilities by Amazon used extensively within and outside Amazon Eco System. It has ability to tap to multiple data sources, run deep learning distributed models and evolves continuously based on latest research design</p>	<p>Licensed AWS SAAS</p>	<p>https://aws.amazon.com/sagemaker/</p>
	<p>https://azure.microsoft.com/en-in/services/machine-learning/</p>	<p>Licensed SAAS from Microsoft</p>	<p>ML End to end offering from Microsoft</p>
	<p>https://cloud.google.com/ai-platform</p>	<p>SAAS from Google (Priced)</p>	<p>ML End to End offering from Microsoft</p>
	<p>Open source ML Framework for classification, regression and prediction</p>	<p>Open Source</p>	<p>https://scikit-learn.org/</p>



STACK	APPLICATIONS	PROVIDER	DETAILS
	<p>End to End ML Framework for classification, regression and prediction (Coming soon)</p>	<p>Licensed SAAS</p>	<p>https://c3.ai/</p>
	<p>Distributed ETL Tool built to process PetaBytes of information in fastest manner</p>	<p>Open Source https://spark.apache.org/docs/latest/api/python/</p>	
	<p>ETL capabilities provided by AWS with underlying PySpark implementation</p>	<p>AWS SAAS</p>	
	<p>Open Sourced Model building Tool built on Python Ecosystem Used to build models</p>	<p>Open Sourced https://jupyter.org/</p>	
	<p>A new entrant powerful ML Language and framework with visualization capabilities</p>	<p>https://julialang.org/</p>	<p>Open source alternative to Python Ecosystem</p>



ABOUT ICREON

Founded in 2000, Icreon has been collaborating with businesses of all sizes to make a new meaningful impact in a new age of digital maturity, resulting in more efficient and powerful brands. We help businesses define the future of their customer experiences and then develop personalized solutions for them by merging technology engineering solutions and the power of digital. These digital-first solutions not only result in commerce transactions, but also enrich our ongoing relationships with our clients.

Headquartered in New York City, Icreon's global capabilities expand across North America, Europe, and Asia. With a dedicated team of over 400 technology specialists across the globe, our team supports clients at companies such as GSK, Novartis, Jazz Pharmaceuticals, New York Road Runners, and Lincoln among others. We blend the art of digital transformation and engineering solutions to generate ROI for brands for "what comes next."

[**Let's Get Started**](#)