

WHITE PAPER

B.A.S.I.C.

The Five Components of Transformational AI

During the past year, I led the development of a new product at WattzOn, GLYNT, which uses machine learning (ML) to transform data trapped in documents (PDFs, scans and images) into structured data flowing to customers. During that year, I witnessed a shift in our priorities, problem framing and conversations. WattzOn became “AI-First.” Now, we are always asking

- Does this effort, product feature, or project plan leverage the full powers of AI?
- Is this effort set up to successfully serve and support the AI?

AI-First is a new buzzword, especially with Google and Microsoft announcing new corporate-wide AI-First strategies. But few really know what the phrase means and what implications it has for changing how an existing company organizes itself. During this past year at WattzOn, we changed how we see what’s important and how we prioritize activities. AI-First became a company-wide change in thinking. We call this shift of an existing business Transformational AI.

As many have noted, AI is a stupendously powerful tool that can transform industries, creating both winners and losers. To be a winner, a company must have more than a toe in the AI water. I’ve summarized what we’ve learned about Transformational AI with the acronym BASIC, which stands for:

- B**usiness impact
- A**I expertise is not enough
- S**oftware in service to AI
- I**nfrastructure to support the AI solution
- C**ollaboration with the non-AI team

Transformational AI and the BASIC framework is not meant for companies that just want to add a small AI project. This is a perspective for companies that have acquired a taste of AI through their first projects, and now want to re-think their business strategy and engineering priorities so they can leverage the power of AI throughout their organization.

Here’s what it takes to be AI-First, to transform a company and gain a powerful competitive advantage. This sounds ambitious, but actually it’s just B.A.S.I.C.

Business Impact of AI

AI is often thought of as an engineering endeavor, mathematically and computationally intense, and magical. Yes, AI can translate languages better than humans and beat humans at the classic board game Go. AI-First, or Transformational AI, puts those nuggets to the side, and strategically thinks through three questions:

- What does an AI strategy need to feed and sustain itself?
- How will the AI strategy capture value for the company?
- Where is the point of greatest leverage for AI? For example, “Where can it make a 20% or greater impact on growth or profits?” or “Where can it cut costs by 20% or more?”

AI is data hungry. Some business models, such as Google search, have a torrent of data everyday. Feeding AI with data is not a problem in that case. Other business models, such as being a real estate

agent, involve 10–15 home sales a year. No data, no AI—or, think again. Isn't the data aggregated by national real estate companies with thousands of offices? If AI can make that 20%+ change in closing real estate sales, the AI-equipped broker will beat the non-AI small broker over and over. An AI-First strategy needs a business model that ensures the flow of data.

Value capture is always part of a business strategy. AI has infused the online loan industry. Instead of using traditional banking and FICO-score data models, AI-centric financing companies have built rich new data sets and powerful models to predict the profits and default rates of potential borrowers. Early AI using companies, such as Zest, SoFi, and Kabbage, got traction, but the online market is big and fragmented with room for entry. New companies are also AI powered. AI is just part of the arms race and everyone needs to have it and use it just to keep up.

In contrast, consider the auto insurance industry. McKinsey reports that Progressive Insurance now segments customers so well that it has over 75% of profitable auto insurance customers, leaving the unprofitable ones to others. Progressive captured the value of their AI strategy and it will be hard for the others to catch up. AI has enabled winners and losers in this industry. However, just because a company is using AI doesn't mean that it is using Transformational AI. Going deeper, the strategist has to figure out where AI can be best leveraged for competitive advantage. It could be via head-to-head competition where AI outcompetes and wins, or it could be by changing the economics of expanding into unexpected adjacent markets. Because AI can so dramatically cut costs, change customer engagement and more, there is a tremendous first-mover advantage that makes it possible to quickly grab market share and market power.

With lots of choices, the key criteria is that the potential economic win must be big enough to create a visible and persistent advantage. AI should be focused where its power can be leveraged for above-normal profits and growth and pointed towards opportunities that can be driven to a large scale. There is high opportunity cost associated with AI talent and time, and it is wasted on small efforts.

To summarize, a Transformational AI strategy looks for four business impacts: data streams, value capture, scale and points of leverage.

AI Expertise is Not Enough

Lots of AI chatter is focused on various attributes of algorithms: how they work, what Google's AI team is talking about, and the relative advantages of each. Because of the AI talent shortage, everyone is scrambling to keep up.

Equally important is a nuanced understanding of the problem at hand. AI expertise assembles the algorithms, but also thinks through the size of the required training data set, how to acquire additional data or make synthetic data, and how to improve the AI application's performance over time once deployed.

AI married to domain expertise is the winning combination. At WattzOn, we provide utility bill data as a service. Our platform covers hundreds of utilities and we've seen a lot of utility bills. It was that knowhow that enabled us to configure the algorithms and the underlying software system to solve

the market's key challenges: maintaining accurate data flow in the face of constantly changing utility bill layouts; and training the AI software based on very small data sets because the nearly 100,000 utilities issuing bills in the U.S. use an enormous variety of bill layouts. Our domain expertise led to a machine-learning product with innovative features.

Other traditional businesses are also customizing their AI tools. Consider the Robotic Process Automation (RPA) market where we see several software providers becoming AI-First so they can address the key adoption friction in the enterprise software market. Enterprise software has long, hard sales cycles because software changes touch so many people across the company. Decision makers proceed with caution every step of the way. The RPA companies addressed this adoption friction by constructing lightweight software tools, "bots," that partially and fully automate routine tasks done by humans. Bots are paired with humans, and adoption of a bot is a small task, disturbing almost no one. But, while the RPA bot starts out as traditional software, its innards can be replaced by AI. With no disruption, the user just experiences a better and faster bot. The RPA company is using its domain expertise to focus its AI strategy.

These tightly coupled business and engineering strategies demonstrate that AI expertise is not enough. It takes a lot of conversations at the leadership-team level to develop a single shared understanding of the problem at hand.

Software in Service to AI

Imagine a software stack that has four components: A, B, C, and D. Pre-AI, company leadership would spread resources across all four components, focusing on incremental performance improvements of the system. What if the company has its highest costs around the C component and sees AI as a solution. What happens to A, B and D? With Transformational AI, it is not business as usual.

Because of the power of AI, the C component shifts from a cost center to a point of leverage. AI's efficiency means that plans for A,B, D should be re-aligned to be in service to C, enabling the new AI-centric software stack to gain the greatest advantage in the market.

Organizing the data flows to support the business advantage of AI is another way that software is in service to AI. Organizing data has two parts that must be solved before starting out. Part One is to assemble a data set to get the first AI effort into production and the market. Part Two is to secure a steady stream of new data so that the business model can exploit the self-learning feature of AI. Without Part Two, the economic advantage of AI is impaired. Transformational AI thinking goes beyond "break the data silos." While that is important, the strategic framework that harnesses all the software components to the AI strategy is also required.

With Transformational AI, each software element is reviewed through a new lens. There is one system, and the question is: How can each element be tuned to gain the greatest leverage for the AI element?

Infrastructure to Support the AI Solution

As is typical with new software technologies, AI solutions require significant infrastructure. That means support for DevOps, security, servers, and special infrastructure for pipelining and orchestrating data into and out of the core AI systems.

But, unlike earlier enterprise software, AI software that transforms the company doesn't come in ready-to-use packages that solve frequent and common problems.

AI today requires bespoke code that specifically targets business practices, sales models, cost structures that are unique to each industry, and legacy infrastructure that is unique to the company. In addition to IT-type infrastructure systems, AI applications need highly trained software engineers that can specify, build, and maintain the solutions. Pretty soon, a new R&D department grows up to manage the complexity of internal software development.

This is a bit expensive and complicated, but often overlooked and very much needed.

Collaboration with the Non-AI Team

Siloed databases, siloed job functions and siloed business units can kill AI. Expect resistance to change. The power of AI may seem almost magical, and to most, unbelievable. Some employees may consider AI a high-risk initiative unlikely to benefit their department. Others might worry about job loss. Some may simply hate to disrupt operations. In many ways, these are the usual frictions to change.

But AI is different because it needs lots of data and can't wait. AI will fail quickly if the planned data lake never happens because of employee foot-dragging.

Transformational AI requires something more as well. It needs business and engineering conversations. Top business managers should be savvy readers of the technology landscape. Senior engineering leaders should know how to bring forward technical information that will be important to shaping business strategy.

At the level of Transformational AI, the frontier is a white space with few well-known markers. But through intense collaboration from the AI-centric team out, the key leverage points will emerge and the first steps will become obvious.

A successful AI project in a collaborative culture will fuel the AI-transformation across the company. The powerful technology will have gained an accelerant. While this sounds great, doubters and silos are serious barriers to AI deployment. Business/engineering collaboration is so important it can separate the AI winners from the AI losers.

Proud of Their Work

As any software leader knows, software developers will quit a company if they feel management does not “get it” —that is, if management is not aligning business strategy with a company’s technology strengths, and has not enabled the software team to make continued progress towards delivering on that strategy. Our experience is that the AI-First strategy had the exact opposite effect on the team. During the past year, as we became AI-First, excitement grew. Developers had an eagerness about their work. They loved moving our technology forward and testing it with early customer response.

AI-First is a large change, so as expected, the team had had a lot of questions. They did their own logic check, and wanted to see all the elements of what I now call BASIC in place. At the same time, they were working closely with AI itself, and saw its enormous predictive power. Through this experience, and through the alignment captured by the BASIC framework, the company was transformed. A label, AI-First, became a way of thinking; it became Transformational AI.

Transformational AI passed the ultimate litmus test at WattzOn. It lines up across business and engineering dimensions, it has a huge impact and it scales, and it puts a smile on the faces of our team.

ABOUT US

GLYNT is a machine learning system that produces a stream of clean, labeled data from any document. Get started in minutes. GLYNT was developed by the team at WattzOn, which uses GLYNT in its products for the energy and credit markets. See us at GLYNT.AI and WattzOn.com