Case Studies from the “Impact from AI in 30 Days” Program

www.aible.com/casestudies
Benchmark Study and Case Studies Report

Impact from AI in 30 Days

Serverless-First Approach for Data Exploration and Automated Machine Learning
Intel® and Aible Performance Benchmark and Case Studies Report

According to MIT-BCG “a mere 10% of Organizations Achieve Significant Financial Benefits With AI”.*

The Gartner report ‘A CTO’s Guide to Top Artificial Intelligence Engineering Practices’ published 29 October 2021 states, “AI projects are characterized by high failure rates and take a long time to move from pilot to production. Slightly more than 50% make it from pilot to production, and those take an average of nine months.”

Reducing the risk and time to value of AI projects is imperative for the success of the AI ecosystem. The Intel® Disruptor Innovation Initiative identified that Aible delivers business value from AI in 30 days, and collaborated with the enterprise AI company to change the “art of the possible” in AI.

Aible: The only enterprise AI solution that guarantees impact in 30 days

Aible is rated #1 for the Automated Machine Learning use case in the 2021 Gartner® Critical Capabilities Report for Cloud AI Developer Services. The easy-to-use solution meets business teams where they are with optimized AI predictions and recommendations for a wide variety of use cases. The result? Organizations are enabled to make quicker, better, strategic and tactical decisions that deliver business value quickly.

The team behind Aible has collectively implemented thousands of successful AI projects over two decades across a wide variety of customers and industry segments. Because the team has a proven history of delivering results, Aible’s offering includes a satisfaction guarantee. To validate the “30 days to AI value” approach, Aible partnered with Intel® and offered 25 organizations access to the AI solution via the Intel and Aible Immediate Impact Program. Each of the participating organizations, which include Fortune 100 firms, defined one business objective they wished to analyze and improve, and published the value they identified from this project directly to Intel. Case studies for these 30-day engagements are available in this report. These include:

- A Fortune 500 technology company used Aible to identify actionable insights for sales opportunities in 29 days
- Another Fortune 500 Healthcare Provider found new insights in Social Determinants of Health (SDoH) data with a 20X improvement in speed to insight in 15 days
- Nova Southeastern University used AI from Aible to potentially improve student retention by 17% in 15 days
- A multinational CPG company used Aible to identify ways to drive $10M in additional sales in just 17 days
- A global food company identified ways to reduce food wastage by more than 10% in 27 days using Aible
- A global manufacturer identified ways to reduce the impact of late shipments by more than $4M annually in just 17 days using Aible
- Another leading University used AI from Aible to mitigate student attrition by 12% in 30 days
- A Leading Food & Beverage services company used Aible to identify actionable patterns and ways to improve sales efficiency in 13 days

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* Intel does not guarantee the performance of 3rd party products. Please consult Aible for more information on their satisfaction guarantee program. More details available at: aible.com/blog/the-aible-payback-guarantee-ai-that-delivers-impact-in-one-month
Some thematic elements are already becoming clear in these case studies that explain why the Aible “30 days to AI value” approach is effective:

**No one has perfectly clean data:**
In almost every case the original dataset was not perfect and had to be updated a few times before the project could be completed. In minutes, Aible Sense automatically evaluates whether the data has signal and this made it easier for the project teams to “fail fast” and iterate until they got to the right data. Aible Sense also automatically adjusts for many common data quality problems and even automatically recommends derived variables (also called “features”) to improve the impact of predictive models.

**Business user involvement is key:** In several cases the business users suggested changes to the dataset, requested more focused analysis (country-by-country for example), or even changed the use case (from demand forecasting to overstock prevention in one case). Aible Explore enabled the project teams to engage with the business stakeholders much earlier in the project by collaborating with them around an augmented open world exploration of their data. Because they didn’t have to wait for the predictive modeling to be completed, and could get business stakeholder feedback earlier in the project, the teams avoided having to change the project after investing months of effort.

**AI must be grounded in business realities and objectives:** In every project, understanding the business objective was key to delivering value. In one case, the customer’s key focus was helping their salespeople make their first sale as quickly as possible. They also had significant constraints on how much effort they could spend on training their salespeople and thus had to assign the best candidates to the more expensive training. Aible Optimize automatically ensures that the predictive models are optimized to deliver business impact in light of the business objective and the business constraints. This enabled the project team to deliver $10 Million in business value in 17 days (see Customer Spotlight #4 on page 9).

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**Components of Cost of AI Training**

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<table>
<thead>
<tr>
<th>Serverless</th>
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<tr>
<td>Data Processing</td>
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<tr>
<td>Feature Creation</td>
<td>&lt;30 sec elapsed time</td>
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<tr>
<td>Modeling</td>
<td>&lt;1% overall cost</td>
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Overheads and latencies related to managing the operation and costs of server infrastructure

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To validate this approach, Aible and Intel benchmarked the performance and total cost of ownership characteristics of serverless computing vs. server architectures for model training.
Benchmark Study initial observations

Organizations like Aible can take advantage of newer Intel technology to improve workload performance and further optimize their applications on serverless. In Aible’s case, when using Intel’s newer compute platforms, specifically 3rd generation of Intel Xeon Scalable processors, Aible’s autoML platform can leverage the wide range of Intel’s oneAPI frameworks, such as Tensorflow, Numpy, Scipy, and Scikit-learn optimizations.

With server-oriented architectures, upwards of 70% of time and costs are tied up in infrastructure overhead which isn’t improved by the performance of the processor. These include overheads for cluster scale-out, VM launch, establishing network connections, copying data and other latencies associated with managing the operation and costs of server infrastructure. On serverless these unrelated activities and costs are mostly eliminated and processor performance improvements more directly affect cost, TCO, and elapsed time performance.

The study also demonstrated a better experience on serverless computing compared to traditional server architectures with comparable Intel processors. When deployed to serverless functions the application was:

- 2-3X more cost effective,
- 3-4X lower Total Cost of Ownership (TCO), and
- 2-3X faster

than on server architecture.

Serverless vs. Servers: Results from Intel-Aible Benchmark Study

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<td>Cost Per Job</td>
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<td>Total Cost of Ownership</td>
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<table>
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<tr>
<th>Server (M4.16xlarge)</th>
<th>Serverless (M4.16xlarge)</th>
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<tr>
<td>$12.92</td>
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<td>$2,615</td>
<td>$3,010</td>
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<tr>
<td>22m 47s</td>
<td>28m 58s</td>
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$4.15 $7.25 $620 $1,070 7m 20s 12m 4s
Serverless computing is 2-3X less expensive than server architectures

The cost of end-to-end model training on server architecture vs. serverless computing using comparable microarchitecture for both assessments was reviewed. Serverless costs were 2-3X more cost effective than server costs: $4.15 vs. $12.90 for 250K rows dataset and $7.25 vs. $15.50 for 500K rows dataset.

Serverless computing has 3-4X lower TCO than server architectures

These costs only reflect the compute capacity required to actively train models and does not include the infrastructure needed to operate the server cluster. With the assumption that infrastructure cost (Kubernetes backplane, control nodes and networking) is $675/month and the cluster is used to conduct 150 model training jobs over 30 data sets in a month, then the Total Cost of Ownership (TCO) of this benchmark actually shows that serverless TCO is 3-4X better than server with comparable processors: $620/month vs. $2,615/month for 250K rows dataset and $1,070/month vs. $3,010/month for 500K rows.

Note that typically most data science organizations process a much smaller number of datasets, conduct fewer model runs and will likely run their training on more expensive server instance configurations. As such, the actual TCO difference is likely to be far greater than outlined above.

Serverless computing is 2-3X faster in terms of elapsed time

After assessing infrastructure cost differences, the study then observed the elapsed time (wallclock time) of the model training.

The wallclock time for exploratory data analysis and model training on serverless vs. server computing, using comparable processors, was 2-3X better: 7 mins 20 secs vs. 22 mins 47 secs for 250K dataset rows and 12 mins 4 secs vs. 28 mins 58 secs for 500K rows. Note that the actual elapsed time from when the model training was started and the first models started returning was less than a minute for serverless. As such, if a mistake had been made, that would become evident within minutes of starting the training. The analyst or data scientist is not beholden to lengthy model processing times to begin reviewing the data.

So what next?

The next section of this report highlights case studies where organizations saw impact in 30 days. Go to: www.aible.com/casestudies to get additional end-customer case studies as they become available. Each case study will talk about how quickly end-customers were able to achieve tangible benefits from AI by using the serverless approach. The final benchmark report will be posted when available, later this year.
# Case Studies from the “Impact from AI in 30 Days” Program

## USE CASES

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**CUSTOMER SPOTLIGHT 1**

Fortune 500 technology company uses AI from Aible to identify actionable insights for sales opportunities in days

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**Challenge**

As the company migrates product offerings from on-prem and perpetual licenses to the cloud with subscription licensing, their global sales team aimed to accelerate business growth by optimizing their sales outreach efforts and better identify the highest value opportunities.

**Solution**

Initial data preparation, data cleansing, and analysis were completed within 5 days. Model training was completed, and analysis was shared with the tech and data teams, with only minor adjustments to the sales use case. In a matter of minutes Aible provided key insights from the data that were validated with the executive team.

**Use Case & Project Details**

- **Use case analyzed:** Sales opportunity prioritization
- **Potential Project Results:** Actionable insights on sales opportunities
- **Time from data provision to project completion:** 20 days
- **Elapsed time from start of model training to completion of over 1,394 models on serverless infrastructure:** 2 hours total across over 5 project iterations

**Outcome**

Aible helped the global sales team identify ways to increase revenue materially within days, using serverless AI.

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"The fact that in a matter of minutes Aible revealed actionable insights within our data that we were not already aware of was surprising. The way it spanned strategic scenario planning, resource planning, analytics, and opportunity scoring in one single platform can be transformative for the way we manage sales."

- Sales Technology Leader
Fortune 500 Healthcare Provider finds new insights in Social Determinants of Health (SDoH) data with a **20X** improvement in speed to insight

**Company Profile**
Fortune 100
American health insurance provider

**Industry**
Healthcare Services

**Region**
US

**Challenge**
The business team wanted to leverage Social Determinants of Health (SDoH) insights to improve health outcomes for members including ways to lower emergency room visits, inpatient admissions and inpatient lengths of stay.

**Solution**
The business team was trained to use Aible and self-sufficiently improve their speed to insights. Aible enabled them to analyze datasets in minutes by just choosing the health condition they wanted to understand. Within days, they were able to perform in-depth analysis of SDoH across 5 unique health conditions by region.

**Use Case & Project Details**
- **Use case analyzed:** Identify insights from Social Determinants of Health (SDoH)
- **Potential Project Results:** 20X improvement in speed to insight
- **Time from data provision to project completion:** 15 days
- **Elapsed time from start of data evaluation to actionable insights on serverless infrastructure:** 3 minutes per dataset on average

**Outcome**
20X improvement in speed to insights.

"I absolutely love using Aible. As a Technology Manager I see the best fit for Aible in our organization. Our business users were able to get into the tool and explore patterns and interactions in our data which seemed impossible to do prior to using Aible."

– Social Drivers of Health Program Director
Nova Southeastern University uses AI to potentially improve first-time in college student retention by 17% in 15 days

**Company Profile**
Largest private, selective research university in Florida

**Industry**
Higher Education

**Region**
Southeast US

**Challenge**
Nova Southeastern University wanted to leverage their data assets to improve student retention and optimize student welfare, particularly aiming at students within their undergraduate program.

**Solution**
Aible helped identify students who were most likely to leave. This helped the center for academic and student achievement target and prioritize their retention efforts to the most at-risk students.

**Use Case & Project Details**
- Use case analyzed: First-time in college student retention
- Potential Project Results: 17% reduction in student attrition
- Time from data provision to project completion: 15 days
- Elapsed time from start of model training to completion of 500+ models on serverless infrastructure: 6 projects trained in ~25 minutes per project

**Outcome**
Aible helped identify ways to potentially lower student attrition by 17%.

"During a one hour meeting we went from a raw dataset, to exploring insights in the data automatically highlighted by Aible, to creating and even deploying a predictive model. The collaboration with academic and financial aid advisors helped us further optimize the models and made them more useful - but we went end-to-end from raw data to deployed model in such a short amount of time."

- Don Rudawsky
  VP Institutional Effectiveness, Nova Southeastern University
Multinational CPG company of beauty and cosmetics uses AI to identify ways to drive $10M in additional sales by optimizing first orders in 17 days

Company Profile
Multinational manufacturer and distributor of beauty and cosmetics products

Industry
Consumer Goods and Manufacturing

Region
International

Challenge
A global cosmetics and manufacturing company aimed to improve the rate of consultants closing their first sales order and optimize resources spent for sales consultant recruitment and training.

Solution
Aible identified potential sales consultants who are most likely to close their first order. This helped in determining which candidates to prioritize for in-person training versus less resource-heavy, all-digital training.

Use Case & Project Details
- Use case analyzed: Onboarding and first order optimization
- Project Results: $10M revenue
- Time from data provision to project completion: 17 days
- Elapsed time from start of model training to completion of over 7300 models on serverless infrastructure: 4 hours total across over 30 project iterations

Outcome
Aible helped identify ways to increase revenue by $10M with serverless AI in 17 days.

"The speed of the Aible product and the rapid iteration it enables is outstanding. I challenged them to train the models live in front of me. The first set of models completed training in less than a minute and several hundred models completed in less than 3 minutes. This was for a significant sized business dataset that had taken us much longer to analyze manually."

– Chief Technology Officer (CTO) & Chief Data Officer (CDO)
Global food company identified ways to potentially improve point of purchase overstock food wastage by over 10% in 27 days

**Challenge**
A global innovative food company wanted to predict the right quantity of stock to send to stores to minimize food waste.

**Solution**
Initial data preparation, data cleansing, and data analysis was delivered within 5 days. Based on business user feedback, the use case was changed from demand forecasting to focus on overstock food wastage. Within 2 days, Aible provided updated analysis on the adjusted use case that was accepted by the business team.

**Use Case & Project Details**
- **Use case analyzed:** Perishable goods overstock & wastage
- **Project Results:** Reduce overstock point of purchase wastage by over 10%
- **Time from data provision to project completion:** 27 days
- **Elapsed time from start of model training to completion of 747 models on serverless infrastructure:** 105 seconds

**Outcome**
Aible delivered a model that could potentially reduce food waste by over 10% in 27 days.

"Aible helped us figure out how to potentially improve our food waste by over 10%. Their iterative process helped us dial in our use cases, and drive towards achieving tangible business impact within 3 weeks."

- Business Intelligence Manager
Global manufacturer identified ways to reduce the impact of late shipments by more than $4M yearly in 17 days.

**Company Profile**
A global leader in manufacturing and distribution of specialized equipment.

**Industry**
Manufacturing

**Region**
US

**Challenge**
Surface patterns around why certain shipments are late, and mitigate loss by prioritizing which shipments to expedite or take remedial action on.

**Solution**
Initial data preparation, data cleansing, and data analysis was delivered within 5 days. Based on business user feedback, the use case was strategically adjusted to incorporate critical business segmentations. Within 7 days, Aible provided updated analysis on the use case that was reviewed and accepted by the business team. Numerous next steps were identified.

**Use Case & Project Details**
- **Use case analyzed**: Late shipment prediction and expedite optimization
- **Project Results**: $4M+ cost reduction
- **Time from data provision to project completion**: 17 days
- **Elapsed time from start of model training to completion of over 2,600 models on serverless infrastructure**: Over 10 iterations in less than 10 minutes each

**Outcome**
Aible helped identify ways to reduce the impact of late shipments by over $4M yearly, with serverless AI in 17 days.

"Aible showed us how to unlock actionable insights in our data. The speed to insight was way faster than we expected, and the insights found would likely never have been uncovered using traditional analytics."

—VP of Marketing & Analytics
CUSTOMER SPOTLIGHT 7

Leading University uses AI from Aible to mitigate student attrition by **12%** in **30 days**

**Company Profile**
Leading Private University

**Industry**
Higher Education

**Region**
US

**Challenge**
A large private university aimed to improve student retention and optimize student welfare, particularly among undergraduate first-year students.

**Solution**
Aible identified students who were most likely to attrit and the best ways to intervene to improve retention. This helped the center for academic and student achievement target and prioritize their retention efforts to the most at-risk students.

**Use Case & Project Details**
- Use case analyzed: First-year student retention
- Potential Project Results: 12% reduction in student attrition
- Time from data provision to project completion: 30 days
- Elapsed time from start of model training to completion of over 1,400 models on serverless infrastructure: 17 projects were trained in ~6 minutes per project with an average of 83 models per project

**Outcome**
Aible helped identify ways to reduce student attrition by 12%.

"AI doesn’t work in a vacuum. Aible’s focus on actionable insights made it easy for us to engage with key stake-holders to improve our business outcomes. This single project also sparked new discussions on process improvements in both our admissions and student retention offices."

– Associate CIO for Solutions Development and Data Architecture
Leading Food & Beverage services company used Aible to identify actionable patterns and ways to improve sales efficiency by **5%**

**Challenge**
The CIO’s team was looking to identify business levers across all functions including sales, marketing and operations, to materially improve overall revenue and profit.

**Solution**
Within 13 days, Aible identified patterns in data that revealed that when salespeople went to a specific residence type at particular times of day, they saw higher conversion rates.

This helped the delivery teams identify which stops to make and when, optimizing their routes to increase sales efficiency.

**Use Case & Project Details**
- **Use case analyzed:** Sales optimization
- **Potential Project Results:** Identified specific patterns to help increase expected sales efficiency by 5%
- **Time from data provision to project completion:** 13 days
- **Elapsed time from start of model training to completion of 166 models on serverless infrastructure:** 17 minutes

**Outcome**
Aible identified ways to improve conversion rate with a 5% improvement in sales efficiency.

“Just 5 minutes into the Aible presentation, I could already see the immense value we could add to our business. I immediately asked my colleagues to drop other meetings to see the report Aible had created within minutes of receiving the data. I’ve spent a lot more money and more time with other tools and have achieved far less.”

- CIO
"The Aible analysis will help us schedule smarter and drive more efficiency/revenue in a key portfolio company. We’re also very excited to leverage Aible for better informed due diligence in many subsequent acquisitions."

- Tom Birchard, President of Home Services
Leading education services company drives 50% savings in 17 days by using AI from Aible to improve prospect targeting

Company Profile
Leading global provider of specialist higher education and careers information and solutions.

Industry
Education Administration Programs

Region
Global

Challenge
The Chief Data and Analytics Officer's team aimed to optimize their digital advertising budget allocation and overall marketing spend as they targeted prospects at recruitment events.

Solution
Customer and marketing spend data was staged in a secure AWS data lake. With cost benefit information, Aible identified only those prospects who had not yet made up their decisions, in order to optimize targeting and market spend. Within days, Aible identified patterns including one where their marketing efforts 7 days prior to any event wasn’t delivering any business impact.

Use Case & Project Details
- Use case analyzed: Marketing spend optimization by targeting prospects (who hadn’t made decision)
- Potential Project Results: 50% marketing cost savings
- Time from data provision to project completion: 17 days
- Elapsed time from start of data evaluation to actionable insights on serverless infrastructure: 8 minutes

Outcome
50% decrease in marketing spend without a change in conversion rate.

“Within 3 weeks, Aible demonstrated significant value. We are already spotting opportunities for further cost saving and are looking forward to the roll out.”

- Chief Data and Analytics Officer
Large hospital system uses AI from Aible to increase speed to insight by at least 10x in 10 days

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</tr>
<tr>
<td>Region</td>
<td>US</td>
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**Use Case & Project Details**
- Use case analyzed: Underpaid claims
- Potential Project Results: 10X improvement in speed to insight
- Time from data provision to project completion: 10 days
- Elapsed time from start of data evaluation to actionable insights on serverless infrastructure: 6 minutes per dataset on average

**Challenge**
Explore patterns associated with why a claim may result in an underpayment to enable more targeted collection efforts. Manual efforts were focused only on a few hundred disputed claims instead of many more underpaid claims each month.

**Solution**
Data engineer / citizen data scientist was able to go from raw data to confirming the data has signal to exploring key underlying patterns and even build a predictive model in 1.5 hours.

**Outcome**
10X improvement in speed to insight.

"Data security is crucial to our business. The Aible security architecture allowed us to analyze data in our own cloud instance without giving Aible access to the data. The implementation just took minutes on AWS and essentially only required us to approve one request on our AWS console.”

- Technical Director, AI & ML
Global manufacturer uses AI from Aible to identify $2M potential working capital reductions in 15 days

**Company Profile**
Global industry leader in glass, ceramics and concrete manufacturing.

**Industry**
Manufacturing

**Region**
US

**Challenge**
The executive team at Client aimed to create value from their data assets across their CRM and analytics systems. Using readily available customer invoice data, they zeroed in on a use case to improve their collections effectiveness for customers who had outstanding payments over 30 days.

**Solution**
Aible identified patterns with clients and invoices where the client is paying late and receiving discounts to sustain the value of business. Aible helped the collections team decide that they needed to advance the payment process and recommended reducing discounts for specific clients.

**Use Case & Project Details**
- **Use case analyzed:** Collections Effectiveness
- **Potential Project Results:** Potential to reduce Days Outstanding on receivables by 5 to 10 days. Expected value $2M over the next 2 quarters as collection processes are adjusted
- **Time from data provision to project completion:** 15 days
- **Elapsed time from start of model training to completion of 415 models on serverless infrastructure:** 9 min 12 sec

**Outcome**
Expected value $2M over the next 2 quarters.

“...When we used Aible Sense to evaluate the data in our new Salesforce and Snowflake instances, we quickly found we were not collecting the data we need to predict sales outcomes. By quickly detecting the problem, we could adjust our underlying processes so that we start collecting the right data. Don’t wait to fully implement systems before analyzing data. The analysis will inform your system’s design so you don’t lose useful data.

- Business Analyst and Aspiring Data Scientist
Global software company uses Aible to prioritize marketing leads to improve win rates by focusing inside sales reps on the best sales opportunities in 19 days

**Challenge**
The company was looking to identify patterns related to sales leads turning into sales opportunities. They wanted to figure out how to optimally allocate sales resources to profitably convert sales leads in their customer base to opportunities. They wanted to bring the marketing and IT teams together to solve a problem that otherwise would have taken months to coordinate.

**Solution**
Aible delivered increased speed to insight tremendously by identifying patterns that otherwise would have been unknowable without the use of AI. Aible identified which leads were worth qualifying with the potential to convert to an opportunity.

**Use Case & Project Details**
- **Use case analyzed**: Sales opportunity prioritization
- **Potential Project Results**: Increase in Sales Productivity
- **Time from data provision to project completion**: 19 days
- **Elapsed time from start of model training to completion of 415 models on serverless infrastructure**: Less than 45 minutes

**Outcome**
Identified potential to drastically increase the speed to engage quality inbound leads by allocating more time for outbound activities. Potential is a boost in sales to customer base.

“We were able to go from raw sales data straight from Salesforce to actionable insights to predictive models telling us which leads to prioritize - all within one hour. In these changing market conditions, speed to insight equals relevance. If analysis and model building takes months, you are working on stale insights. We were able to iterate in a matter of minutes to improve our insights from Aible. Aible’s speed and ease of iteration is key to getting value out of your data.”

– Senior Director of Marketing
Global Electronics Distributor uses Aible to achieve 15x improvement in speed to actionable insights in 24 days

**Company Profile**
- **Electronics Component Distributor**
- **Industry**: Distribution
- **Region**: Global

**Challenge**
The team wanted to improve the data cleansing process and identify valuable insights in their data. Additionally, the data science and operations teams wanted the ability to quickly analyze data to improve processes and reduce costs.

**Solution**
The business team was trained to use Aible, empowering them to discover speed to insights, specifically as they analyzed operational data. The Data Science team used Aible to automatically validate the dataset quality. This dramatically sped up the process and created the potential to take on additional projects.

**Use Case & Project Details**
- **Use case analyzed**: Inventory management and Operational excellence
- **Potential Project Results**: 15X improvement in speed to insight.
- **Time from data provision to project completion**: 24 days
- **Elapsed time from start of data evaluation to actionable insights on serverless infrastructure**: 5 minutes for each dataset

**Outcome**
15X improvement in speed to insights.

"The speed in which Aible performs the heavy lifting of analyzing our data is incredible. Aible replaced our current manual processes with spreadsheets that took weeks to find insights with automation that now only takes minutes."

- Operations Manager
Anytime Fitness uses AI from Aible to identify patterns around achieving fitness goals and improving member experience in 12 days.

**Company Profile**
Large fitness and wellness franchise

**Industry**
Health + Fitness Services

**Region**
Global

**Challenge**
The project purpose was to investigate what factors led to certain members being able to achieve their fitness goals – including the member’s physical profile as well as the member’s exercise activities.

**Solution**
Utilizing Aible Sense and Explore, the organization was able to quickly identify patterns related to members achieving certain fitness goals. This allowed the organization to potentially target consultations in a more effective manner, and improve member experience and outcomes. The analysis showed the actual benefit of exercise visits net of all other factors. It also showed the importance of proper hydration.

**Use Case & Project Details**
- **Use case analyzed:** Fitness goal achievement
- **Potential Project Results:** New insights generated around member behavior and the achievement of fitness goals
- **Time from data provision to project completion:** 12 days
- **Elapsed time from raw data to evaluation of 572,850 variable combinations on serverless infrastructure:** Less than 10 mins

**Outcome**
Aible was able to immediately identify patterns related to member success, thus potentially improving member experience and outcomes.

“The time to insight and the fact we can push a couple of buttons to get there was extremely impressive. The platform showed us some patterns we knew and many we didn’t. The insights allow us to provide more curated experiences for our members and more effective and targeted recommendations to improve their chance of success – most notably of which was to make sure to stay hydrated.”

– Chris Sullivan, VP Enterprise Data and Security, Anytime Fitness
National healthcare intelligence company uses AI from Aible to shorten sales cycles and improve win rates

**Company Profile**
Technology company that supports electronic transmission of prescriptions and general health information

**Industry**
Healthcare Technology

**Region**
US

**Challenge**
The company wanted to identify patterns and leading indicators related to improving sales, and identify which opportunities were likely to be successful.

**Solution**
Aible “cuts through the noise in our data” to find new, meaningful customer insights. Aible identified which opportunities should be pursued and which should be deprioritized, while achieving the overall business strategy of increasing revenue while keeping sales resourcing constant.

**Use Case & Project Details**
- **Use case analyzed**: Sales Optimization
- **Potential Project Results**: Upper 6-figures increase in annual revenue and profits
- **Time from data provision to project completion**: 29 days
- **Elapsed time from start of model training to completion of 800+ models on serverless infrastructure**: More than 800 models were trained in ~1.5 hours

**Outcome**
Potential for upper 6-figures annual increase in revenue and profits.

"Aible quickly identified our close ratios by customer type which will help us with our sales strategy. Our sales teams live in Salesforce, so the ability to integrate Aible's predictions in Salesforce and monitor the outcomes will help us prioritize our pipeline opportunities and new business targets”

- Director of Sales Operations
Vertiv delivered 4 analytics and AI projects in 28 days and proved out solution for a scalable Center of Excellence for Data Science teams.

**Challenge**
Vertiv aimed to leapfrog their competitor’s approach in establishing a Center of Excellence for Data Science, encompassing large teams of data scientists at low-cost offshore locations. They wanted to use Aible to show success rapidly on a wide variety of use cases to prove a different approach to establishing a scalable CoE.

**Solution**
Aible delivered results for multiple use cases: partner sales optimization, churn prevention, marketing spend optimization and global sales optimization.

**Use Case & Project Details**
- Use cases analyzed:
  - Channel partner churn prevention
  - Channel partner sales optimization
  - Global sales optimization
  - Marketing spend optimization
- **Project Results:** Delivered results across 4 different use cases
- **Time from data provision to project completion:** 28 days
- **Elapsed time for model training to completion of 987 models on serverless infrastructure:** 22 min

**Outcome**
Delivered recommendations for all 4 use cases in 28 days.

“AI is key to delivering our corporate strategy. We need something fast that will help us adjust our actions in line with our strategy based on latest market conditions. Throwing a lot of people at the problem was not the solution. Aible showed us a different scalable way of achieving the same goals at a far lower overall cost than alternative approaches.”

- Martin Coulthard, Senior Global Director, Digital Customer Experience, Vertiv
Leading UK University uses AI from Aible to gain 10X increase in speed to insight

Company Profile
Leading UK University

Industry
Higher Education

Region
EMEA

Challenge
The Employability Services Team wished to understand which of their activities have the biggest impact on high skilled employment outcomes across different student groups. They wanted to improve employment outcomes by identifying and acting on students, based on insights learnt about their behavioral and demographic characteristics.

Solution
The data and analytics team was able to conduct in-depth analysis of student outcomes with Aible Sense & Explore. Within minutes, they uncovered previously unknown factors and behaviors that drive employment outcomes for various student groups. The analysis also identified areas of information gaps, helping steer future data collection efforts.

Use Case & Project Details
- Use case analyzed: student employment outcomes
- Potential Project Results: 10x speed to insight
- Time from data provision to project completion: 15 days
- Average elapsed time from start of data evaluation to actionable insights on serverless infrastructure: 5 mins

Outcome
10x improvement in speed to insights.

“Aible is impressive. It has helped our teams achieve a new level of confidence when we look at data by fueling deeper discussions around insights in an unbiased manner. Our business users were wowed by the speed to insights with Aible and I have no doubt that this is going to be transformative in the way we operate.

- Data & Analytics Leader
Global CPG Company used Aible to deliver rich AI-generated insights for category growth ideas within four weeks.

**Company Profile**
Leading CPG firm that produces and markets Health, Hygiene and Nutrition Products

**Industry**
Consumer Packaged Goods

**Region**
Global

**Challenge**
The company wanted to understand product line growth opportunities by geography from their complex datasets. They wanted to understand key macroeconomic and social determinants of success, as well as how marketing investments influence success in their markets.

**Solution**
Across four large data sets, the Aible Professional Services team was able to rapidly and iteratively assess data readiness for this AI initiative using Aible software. The data was transformed, combined and augmented to improve insights within one day. The speed and agility of the platform provided insights rapidly while reducing drudgery and avoiding dead-ends. By automatically ranking and surfacing key determinants and patterns in the data, the team was able to, in record time, spot new ideas and detect blindspots.

**Use Case & Project Details**
- **Use case analyzed**: Understand key drivers/determinants of market, category, and product success
- **Results**: Delivered analysis and results across 4 large datasets in days
- **Time from data provision to project completion**: 29 days
- **Average elapsed time from start of Data readiness assessment in under 5 minutes and training of 83 models in under 5 minutes

**Outcome**
Delivered insights to support growth ideas and identify important trends, opportunities and threats.

“Thank you so much for your team’s effort in helping us discover new insights. The speed to dataprep and the speed to insight was surprising. I was genuinely surprised that the project effectively got done in 15 days despite the multiple dataset changes. In my opinion the platform is a breakthrough.”

- Global Head of Category and Insights
Global technology company uses AI from Aible to templatize the ability to identify meaningful sales patterns in just 28 days.

Company Profile
SaaS Data Protection Platform

Industry
Software

Region
Global

Challenge
The company needed to easily identify sales patterns across a variety of different potential datasets in a rapid, low-touch, and reproducible manner.

Solution
Utilizing Aible Sense & Explore, the organization was able to improve the speed to insight substantially with automated data preparation, cleansing and analysis. Only minor adjustments were made to create replicable blueprints for additional projects.

Use Case & Project Details
- Use case analyzed: Sales Optimization
- Potential Project Results: Vast improvement in efficiency
- Time from data provision to project completion: 28 days
- Elapsed time from start of model training to completion of ~600 models on serverless infrastructure: Less than 1.5 hours

Outcome
The platform was able to identify the important variables related to a sale as well as highlight variables that should be excluded from future iterations.

“We needed a platform that could easily automate and templatize the identification of which data elements were important to consider in an analysis – and show us those patterns. Aible demonstrated it can do just that, faster than we ever thought possible.”

- Senior Vice President, Product Management
Multinational retailer uses AI from Aible to gain deeper understanding of customer LTV drivers in 30 days

**Challenge**
The company wanted to better understand the drivers and levers of customer lifetime value. There are a vast number of metrics available to measure customer behaviour and activity, and they wanted to understand which of these are most important, why, and how.

**Solution**
Within a day of data provisioning, the team was able to assess their data quality for AI projects and also obtained preliminary insights using augmented analytics. Automated transformations were leveraged to further improve the quality and actionability of the results. The team was significantly hands-on in driving this analysis. Within 2 weeks several members of the analytics team were additionally enabled on the product.

**Use Case & Project Details**
- **Goal:** Understand key drivers and determinants of customer lifetime value (CLV)
- **Results:** Increased speed to actionable insights
- **Time:** 30 days
- **Elapsed time from start of data evaluation to actionable insights on serverless infrastructure:** 10 mins

**Outcome**
Delivered detailed understanding of the top drivers and actionable insights for customer lifetime value (LTV) in 30 days.

"We were keen to understand actionable drivers that can lead to customer value growth over time. We were impressed by the speed with which Aible’s platform was able to generate deeper insights using our data, quite a few of which were previously unknown. This also generated a lot of discussion internally and helped us take the analysis to the next level, which would have otherwise taken us a lot longer to accomplish. I believe Aible’s platform can be a very effective for discovery and exploratory work."

– Head of Growth Insights
International Law Firm uses AI from Aible to increase speed to insight by at least 10x in 26 days

Company Profile
International Law Firm

Industry
Legal Professional Services

Region
Global

Challenge
The Business Analytics team wanted to leverage augmented and predictive analytics to model and predict matter (a legal engagement) profitability. They wanted to understand what factors can help identify and mitigate profit-target risks at the start and midway through a matter.

Solution
The Business Analytics team used Aible Sense to load, transform and confirm their data had the right attributes to model matter profitability, Aible Explore was leveraged to accelerate their speed of analysis and discovery of previously unknown factors and interactions and Aible Optimize to demonstrate predictive modeling to assist matter selection.

Use Case & Project Details
- Use case analyzed: Predict Matter Profitability
- Potential Project Results: 10x speed to insight and multiple use cases identified
- Time from data provision to project completion: 26 days
- Average elapsed time from start of data evaluation to actionable insights on serverless infrastructure: Over 1M variable combinations analyzed and 664 models trained in 15mins

Outcome
10x improvement in speed to insights and multiple new AI use cases identified to help predict new matters that will meet profit targets.

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Outcome
10x improvement in speed to insights and multiple new AI use cases identified to help predict new matters that will meet profit targets.

“Aible helped us innovate and mature our analytics capability without the delays, risk and cost of establishing a dedicated Data Science function. Aible empowered us to rapidly explore datasets and uncover layers of insight which enabled us to move almost instantly from thought to action. The ability to jumpstart and optimize AI use cases and identify new projects by quickly assessing the quality and suitability of data sets for analysis is incredibly powerful.”

- Head of Business Analytics
Overstock uses Aible Sense to improve speed to data-quality evaluation from weeks to minutes per dataset on Google Cloud Platform

CUSTOMER SPOTLIGHT 23

Company Profile
Leading Online Furniture and Home Furnishings Retailer

Industry
Retail

Region
North America

Challenge
Overstock wanted a faster approach to analyze multiple datasets on GCP including data from their website, digital marketing, and e-commerce solutions. They wanted a comprehensive view of where they had valuable data in order to identify buying behaviors, key variables and insights affecting a sale, and to improve their overall Gross Merchandise Sales.

Solution
Aible Sense scanned dozens of datasets across multiple sources on GCP to detect data that is useful for analysis and for creating predictive models. This filtered out datasets with weaker signal for analytics or predictions, and significantly optimized the cost-effectiveness of their pay-per-query cloud data warehouses. This was achieved by completely automating manual data engineering tasks at extremely low cost by using Serverless techniques and Google BigQuery.

Use Case & Project Details
- **Goal:** Improve data quality readiness for analysis and machine learning
- **Results:** Improved speed to data-quality evaluation from weeks to minutes per dataset
- **Time:** 5 days
- **Elapsed time from start of data evaluation to actionable insights on serverless infrastructure:** 10 mins per dataset

Outcome
Delivered detailed understanding of the improved speed to data-quality evaluation from weeks to minutes per dataset.

"We extensively use Google BigQuery. Aible’s seamless integration with BigQuery allowed us to analyze datasets with a single click, and in a matter of minutes automatically get to a dynamic dashboard showing us the key insights we need to see. This would have taken weeks of work using our current best practices. When we can analyze data in minutes, we can get fresh insights instantly as market conditions and customer behavior changes."

- Joel Weight, Chief Technology Officer, Overstock.com
CUSTOMER SPOTLIGHT 24

In just 8 days, major international Airline uses AI from Aible to predict flight delays for future schedules

Company Profile
A leading US based airline that operates across six continents.

Industry
Airlines and Aviation

Region
US

Challenge
During scheduling, it is difficult to identify where flight delays are more likely to occur. Being able to identify potential issues more than 30+ days in advance would provide time to adjust the schedule to mitigate delays.

Solution
Began evaluating a dataset with over 28M variable combinations on day 1. Used Aible Sense & Explore to refine the dataset down to the critical factors. Refreshed the data based on the important variables identified. Trained 750 predictive models to identify future delays as soon as the schedule is published.

Use Case & Project Details
- Use case analyzed: Flight Delay Prediction
- Potential Project Results: Identified potential at-risk flights more than 30+ days in the future
- Time from data provision to project completion: 8 days
- Elapsed time from start of model training to completion of 166 models on serverless infrastructure: 10 mins

Outcome
Proactively identified thousands of at-risk flights, 30 days in the future.

“Aible Sense quickly identified the quality of our datasets and extracted the variables that contribute to delays. Just after few iterations of fixing data quality, we began training the model to deliver predictions.”

- Senior Manager
A vertical-specific strategy team experiments with AI from Aible to explore factors influencing successful account transformations.

**Challenge**
The strategy team wished to improve their internal data collection and to understand how Aible could provide insights into their strategic activities.

**Solution**
The team used Aible Sense to load, transform, and explore the signal from their team’s data. After confirming the initial data lacked a clear driving metric, the team reconfigured the initial dataset and layered it with account revenue data. Using Aible Explore with the new dataset led to the discovery of factors and interactions driving account revenue improvement that merited further exploration.

**Use Case & Project Details**
- **Use case analyzed:** Strategy exploration and experimentation
- **Potential Project Results:** 10x speed to insight
- **Time from data provision to project completion:** 70 days
- **Average elapsed time from start of data evaluation to actionable insights on serverless infrastructure:** 5 mins

**Outcome**
Identification of gaps in initial data and improvement for speed to critical queries. Continued experimentation required to gain actionable insights.

“**Aible helped us invert our thinking to quickly get to valuable questions. This way of thinking helps our team drive more-effective data-driven decision-making amongst ourselves and with our customers.”**

- Strategist
Gartner Disclaimers

Gartner, Critical Capabilities for Cloud AI Developer Services, 19 October 2021, Van Baker et. Al.

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<th>Performance, Cost, TCO (Est.) Claims</th>
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<td>AWS Serverless based on Intel(R) Xeon(R) Processor at 2.5GHz Model 63 (Haswell) provides up to 3.1x and 2.4x speedup in model training time vs. AWS Server m4.16xlarge instances based on Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz for 250k rows and 500k rows respectively.</td>
<td>Comparing AWS Lambda us-east-1 region, with 6x vCPU, Intel(R) Xeon(R) Processor @ 2.5GHz Model 63 (Haswell), 10 GB containers, Amazon Linux 2, 4.14.165-102.205.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 vs. autoscaling 0-8VMs, us-east-2, m4.16xlarge instance with 64x vCPU, Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz, 256 GB total DDR4 memory, (launching containers with 6vcpu/10GB memory), Debian Gnu/Linux 11 (bullseye), 5.4.156-83.273.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 with <a href="https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon">https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon</a> dataset.</td>
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<td>Comparing AWS Lambda us-east-1 region ($0.000167/6000 $/s/instance), with 6x vCPU, Intel(R) Xeon(R) Processor @ 2.5GHz Model 63 (Haswell), 10 GB containers, Amazon Linux 2, 4.14.165-102.205.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 vs. autoscaling 0-8VMs, us-east-2, m4.16xlarge instance ($0.000089/88888 $/Instance) with 64x vCPU, Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz, 256 GB total DDR4 memory, (launching containers with 6vcpu/10GB memory), Debian Gnu/Linux 11 (bullseye), 5.4.156-83.273.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 with <a href="https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon">https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon</a> dataset.</td>
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<td>Comparing AWS Lambda us-east-1 region ($620 for 250k dataset and $1070 for 500k dataset incl. total processing time and $0 backplane cost), with 6x vCPU, Intel(R) Xeon(R) Processor @ 2.5GHz Model 63 (Haswell), 10 GB containers, Amazon Linux 2, 4.14.165-102.205.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 vs. autoscaling 0-8VMs, us-east-2, m4.16xlarge instance ($2615 for 250k dataset and $3010 for 500k dataset incl. total processing time and $675 backplane cost), with 64x vCPU, Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz, 256 GB total DDR4 memory, (launching containers with 6vcpu/10GB memory), Debian Gnu/Linux 11 (bullseye), 5.4.156-83.273.amzn2.x86_64, running Aible Model Training with 70 TensorFlow 2.7 models over a range of network topologies and custom loss functions, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 vs. autoscaling 0-8VMs, us-east-2, m4.16xlarge instance with 64x vCPU, Intel(R) Xeon(R) CPU E5-2686 v4 @ 2.30GHz, 256 GB total DDR4 memory, (launching containers with 64vcpu/10GB memory), Debian Gnu/Linux 11 (bullseye), 5.4.156-83.273.amzn2.x86_64, average Model training time is the geomean of notebook runtime from 3 runs over 11 representative TensorFlow models, numpy==1.21.4, pandas==1.3.5, scikit-learn==1.0.2, scikit-learn-intelex==2021.5.3, scipy==1.7.3, tensorflow==2.7.0, python:3.7.12 test by Intel on 02/22/2022 with <a href="https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon">https://www.kaggle.com/ankitkalauni/bank-loan-default-prediction-hackathon</a> dataset.</td>
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