

LIONBRIDGE



WHY AI? HOW LANGUAGE & AI SERVICES GO HAND-IN-HAND

How does the world's most trusted global communications platform end up training some of the world's most cutting-edge machine learning systems?

HERE'S OUR STORY.

Inside, you will learn:

How a technology-enhanced community of people helped forge our reputation as the world's most trusted language services provider.

How our community bridges the gap between customers' problems and their solutions—whatever those problems might be.

How our linguistic expertise makes us particularly well-suited to partner with today's pioneering AI companies.

BREAKING BARRIERS. BUILDING BRIDGES.

At Lionbridge, we're a people-first tech company.

Wait, you might be thinking. *Isn't that oxymoronic? How can people and machines coexist as top priorities?*

To us, it's simple. For more than 20 years, we've counted on a growing community of passionate experts around the world to power the work we do. Every day, on nearly every continent, we unleash this community for our clients. Whatever the need—a lightning-speed translation, a QA check for a video game, a high-quality dataset labeled to train a chatbot—we activate our tech-enabled community of lions to get it done.

We're barrier-breakers. Bridge-builders. We build solutions everywhere, for any problem. We help companies optimize their messaging, brand voice, and marketing materials for any market, in any language. We help streamline and automate internal processes, so brands can communicate more quickly and naturally with more customers worldwide. And now, in growing numbers, we help collect and annotate high volumes of data to help train our customers' AI systems to be more human.

The good news for us? Our years of experience solving problems for our translation and localization clients have uniquely positioned us to tap into those same skills and workflows to help customers in their AI-creation journeys.

In this paper, you will learn:

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- How our community bridges the gap between customers' problems and their solutions—whatever those problems might be.
- How our linguistic expertise makes us particularly well-suited to partner with today's pioneering AI companies.

THIS IS OUR WORLD. LET US SHOW YOU AROUND.



PEOPLE FIRST: HOW OUR COMMUNITY HAS POWERED OUR WORK FOR 20+ YEARS



In theory, translation sounds relatively simple. Take one language, change it into another. Two steps. Done.

In practice, of course, things are more complicated. *Effective* translation necessitates a nuanced understanding of (at least) two languages and cultures, both source and target.

It requires an understanding of the original content's goals. It mandates a fluency in tone and subtext as well as vocabulary and grammar. In short, it requires a highly competent *person* to effect resonance.

In theory, companies could (and some do) perform translation and localization work in-house. But the reason so many choose not to is because a language service provider (LSP) like Lionbridge can help simplify processes (and, in the long run, reduce costs) when translation and localization get really complicated. And complications happen as a result of three distinct customer needs: speed, scale, and quality.

At Lionbridge, we've earned a reputation as relentless orchestrators of this complexity—largely because of our responses to those three needs.

How do we do it? Our experienced project management team nimbly harnesses a community of tens of thousands of global translators and subject matter experts, who have deep linguistic and cultural knowledge and expertise across industries. Our tech-powered platform enables us to leverage this community quickly and efficiently, so we can solve problems for clients struggling with a central paradox: that is, how can they maximize translation quality while minimizing time and cost?

Clients wonder: must they sacrifice speed if they want top-quality translations? Must they accept lower quality if they need translations more quickly? Will a fast, excellent translation blow their budgets?

When they work with us, they find the answer to these questions is, in fact, no. The efficiency of our project managers and the quality of our technology, plus the size and scope of our expert translators, allow us to optimize for each node on the triangle of pressures clients face. Here's how.



Need for Speed

Customers engage professional LSPs when they need expert translation and localization *fast*. By choosing an LSP like Lionbridge, customers can rest assured that their real-time interpretation, multilingual/multichannel marketing, or high-stakes regulatory translation needs (among many others) will be met—no matter how tight the turnaround time.

For decades, clients have chosen Lionbridge when they've needed fast project turnarounds without risking a compromise in quality. Over the past two decades, we've built a highly efficient workflow and translator management platform, which allows us to meet client needs around the clock and around the globe. Our translator base is vast enough, and our project management process streamlined enough, that we can find just the right person for the translation project—no matter the industry, source, or target language.

Plus, our talented technologists treat every client's project like their own and develop tech-powered systems that automate work where applicable, reducing days or weeks of work into mere minutes. Our tech-enhanced network of connected experts meets our clients' need for speed—and allows us to provide over 99% on-time delivery.

Global Scale

A translation or localization process is relatively straightforward if it includes one source language and one—or even two or three—target languages. But what happens when it includes 10? Or 30? Or 50?

Lionbridge's global community of tens of thousands of workers and in-market solution centers in 27 countries makes localizing our customers' content in 50 languages as

manageable as localizing it in five. The talented translators in our community are fluent in 350+ languages and boast nuanced expertise across more industries than any other LSP. That means we can find just the right person with the right combination of linguistic skill and subject knowledge to localize a company's website, user guides, marketing materials, and more—in any language it desires. When companies need to reach prospects in new markets while continuing to engage with current customers in existing ones, our vast and carefully-curated community eases the localization burden.

Companies can't do that alone, and they can't do it without on-the-ground experts with the linguistic fluency they need in their target markets. Thanks to our hard-working community and our global presence and infrastructure, we provide our customers with that ability to scale—whatever "scale" might mean to them.

Quintessential Quality

At Lionbridge, we stand by our commitments to speed and scale, but we're proudest of the quality of our translations and localizations. Our customers agree with us: in 2018, they gave us a 92% satisfaction rate and trusted us to translate more than 273 million words every month.

It's our community that secures that *quality* standard. We have access to experts all around the world, who can identify the nuances that mean the difference between content that feels like it was created in local language and content that's close, but not quite right. Our solution centers and tech-powered platforms allow us to reach translators all over the world, but it's their brain power—and our rigorous quality-checking—that ensures the on-brand, on-target quality our customers have come to expect.

BUILDING BRIDGES FROM PROBLEMS TO SOLUTIONS



For more than 20 years, we've unleashed our community to solve communication problems for our customers.

When a barrier exists between our customers and *their* customers, Lionbridge has perfected the process of breaking it down and building a bridge to the best possible solution. When it comes to localization, that barrier takes the form of a linguistic or cultural gap.

A company comes to us because it needs to share its message with the world, but a difference in languages, cultures, and/or locations precludes that message from resonating. We tap into our global community of translators and experts, establish efficient workflows and frameworks, and solve that problem by translating and localizing our customer's message with speed and quality at scale. Bridge built.

Interestingly, our decades of experience building linguistic bridges have allowed us to apply those same processes to a wider array of problems.

For years, we've lent our project management expertise and global community to myriad customer needs that extend past linguistic services. In recent years, we've witnessed a subtle shift: more and more customers who have relied on us for years to help with their translation, localization, and testing needs are beginning to develop AI systems. We saw a niche our highly-orchestrated global community could uniquely fill: helping customers train their nascent AI systems.

And though AI may be preternaturally in vogue at the moment, understanding of and facility with it is nothing new for us. Over the past two decades, we've developed AI-driven tools that have allowed us to solve that time/cost/quality paradox for our clients. We've harnessed tools like Translation Memories, taxonomies, and ontologies that enable us to translate better, faster. Machine Translation's first quantum leap in 1998 saw our early leadership in using and understanding language-focused AI emerge. We've been experts in training AI for language processing long before training AI became a need for multiple use cases. So, as our customers began to enter the AI space, our involvement in training their tools seemed a natural fit. Just as we do with translation and localization projects, we leverage our community and our project management expertise to train AI with speed, quality, and scale.

What Makes Artificial Intelligence More Intelligent?

*Though the concept and study of Artificial Intelligence (AI) is **nothing new**, its rapid development is, as are its applications across industries.*

At its core, AI is "intelligence" that machines demonstrate when they perform tasks usually considered to require inherently human types of thinking, such as learning and problem-solving. In recent years, AI has benefited from increasing computer power. More powerful computers yield not just more intensive processing during a task at hand, but also more advanced machine learning, which is how computers gain the knowledge that's required for AI applications.

Machine learning is a branch of computer science that uses massive amounts of data to teach computers how to perform a task. Machine learning examines data related to a particular task, finds patterns in those data and makes associations among them, then uses those new learnings to shape how the computer performs the task. If, after this analysis, the computer gets better at performing the task, then machine learning has occurred.

Because computers have enabled the existence of data on just about every topic in the world, companies are using machine learning to improve computer performance in everything from weather forecasting to automatic stock selection to machine translation to chatbot development to precision medicine and more.

The opportunities are limitless when companies have a good algorithm—and access to huge volumes of high-quality training data.

LOC AND AI MADE SIMPLE(R)

When something separates our customers from their customers, we build a bridge.

That “something” could be a language gap.
A lack of data. A complicated regulation. An untested device.

Whatever it is, we find the solution—and help our customers reach *their* customers faster.

Brand with a Message to Communicate

We tap into our community of global translators with expertise across languages and industries to share your message worldwide

Global Multilingual Customers

Company with an Untrained AI System

We tap into our community of global workers to collect, annotate, and validate the high-volume, high-quality data needed to optimize your AI and bring it to market

Global Customers Using Your AI

Building Bridges for AI Customers

Our tech-powered community allows us to build a bridge from a company with a message to share to its global, multilingual customers. And our nearly million-strong community of raters, testers, transcribers, and more allows us to build a bridge from a company with an untrained AI system to global customers who want to use it.

The scope of the service is similar: a customer with a need hires Lionbridge to tap into its highly-curated community, assign tasks, manage the process, and achieve the desired outcome. The actual work (i.e., translating documents vs. annotating data) may be different, but the *process* is substantially similar:

Some of the services we collectively refer to as AI training data

	INPUT DATA (What Our Customer Provides)	OUTPUT DATA (What Our Crowd Creates and We Send Back to the Customer)
TRANSLATION	Mike loves soccer	Mike liebt Fußball
SENTIMENT ANALYSIS	Mike loves soccer	Positive
CATEGORIZATION	Mike loves soccer	Sports
ENTITY EXTRACTION	Mike loves soccer	Person: "Mike"
CONTENT MODERATION	Mike loves soccer	No spam

Customers developing cutting-edge AI systems need huge volumes of high-quality data to train their algorithms. Without this data, the AI won't keep learning and won't be able to refine its mimicry of humans. To learn, AI systems need to see patterns emerge among data sets again, and again—and once more, for good measure.

Voluminous data doesn't come instantly, though, nor does it come ready for processing by machines. Companies creating AI need humans to collect data for them and prepare it, so machines can use it to learn as efficiently and effectively as possible. Broadly, that means companies building AI systems require humans for three main purposes:

1

To collect data

2

To annotate that data so machines can more readily learn from it

3

To validate the accuracy or relevance of the AI output

Companies that need high-volume, high-quality data have turned to Lionbridge for largely the same reasons companies that need high-volume, high-quality translations do: because we are powered by an always-on, tech-enabled community around the world. We've carefully curated this community (our acceptance rate is just 22%) to ensure the best possible output for our clients. By engaging with Lionbridge, customers engage with the highest echelon of data services talent.

As it does with translation, our winning combination of people, process, and expertise allows us to meet each corner on that

triangle of seemingly irreconcilable needs: for scale, speed, and quality. Our expert project managers unleash our global crowd to perform any task a client needs—and the workflow process is substantially similar when the task is translation as when it's data collection, annotation, or validation. Lionbridge is uniquely situated to perform these tasks with the highest degrees of speed and quality at scale.

"We filled what was missing in our customers' service needs," says Jane Nemcova, Managing Director of Artificial Intelligence for Lionbridge. "We married our community's language service capabilities with deep natural language processing expertise. Our first customer needed both capabilities simultaneously."

And the same qualities that differentiate Lionbridge from other LSPs when it comes to translation and localization (i.e., speed, scale, and quality) apply to our AI-creating customers who need huge volumes of high-quality data—fast.

"Translation and localization are ways everyone scales," explains Nemcova. "Customers need to go from one market to multiple markets to build out their products. In the world of AI, the issue in scaling is the amount of training and testing data required for the product to work in these markets. That's a huge need, and we're ahead of others in fulfilling that need and perfecting our process. We simply have more people and more resources in more countries. And implied in that is the infrastructure. We have a lot of offices—we have people on the ground who can set up a lab and assemble a team of workers in more than four dozen countries. We can meet whatever needs our customer throws at us."



LINGUISTICS & MACHINE LEARNING: A PERFECT MATCH



The size of our global community and the quality of their work may have been the catalyst that sparked the launch of our Artificial Intelligence division, but our decades of linguistic expertise continue to contribute to our strength in the space.

“There are really two domains in machine learning that need human input,” says Charly Walther, VP of Product at Gengo, now a Lionbridge company. “Natural language processing (NLP) and computer vision. NLP is a natural fit for Lionbridge in terms of technology, the workforce behind it, and their expertise.”

Indeed, NLP is a subfield of machine learning focused on teaching computers to process language, you guessed it, *naturally*. It’s an exercise in using data to teach computers the nuances and subtexts of conversation that come intuitively to humans.

For example, how would a machine understand this sentence: “The bass line in this song is sick.” How would it know that in this context, *sick* means *good*?

There’s overlap in the skills needed to localize content so it retains the nuance and subtext of its original language and the skills needed to teach a machine to move past the literal.

Just as translators need to understand slang, idioms, and humor when they’re localizing content, so do data-annotators need to understand and codify those same traits in order to teach a machine to speak like a human.

Lionbridge’s understanding of and facility with this element of linguistics make selecting us to do data collection, annotation, and validation work a natural choice for companies creating NLP components and systems, and it creates a sweet spot of linguistics-related machine learning services in the Venn Diagram of offerings we provide to our customers.

Plus, Lionbridge hires some of the world’s most talented professionals to conduct this work. Our data collectors, annotators, and validators are highly educated, often bilingual professionals who are pre-qualified and validated before they ever begin a project. Located in 160+ countries and subject to rigorous quality and security processes, our global workers can be found wherever our customers need them. Their quality, in turn, ensures the highest-quality data for every project.

LET US BE YOUR PARTNER

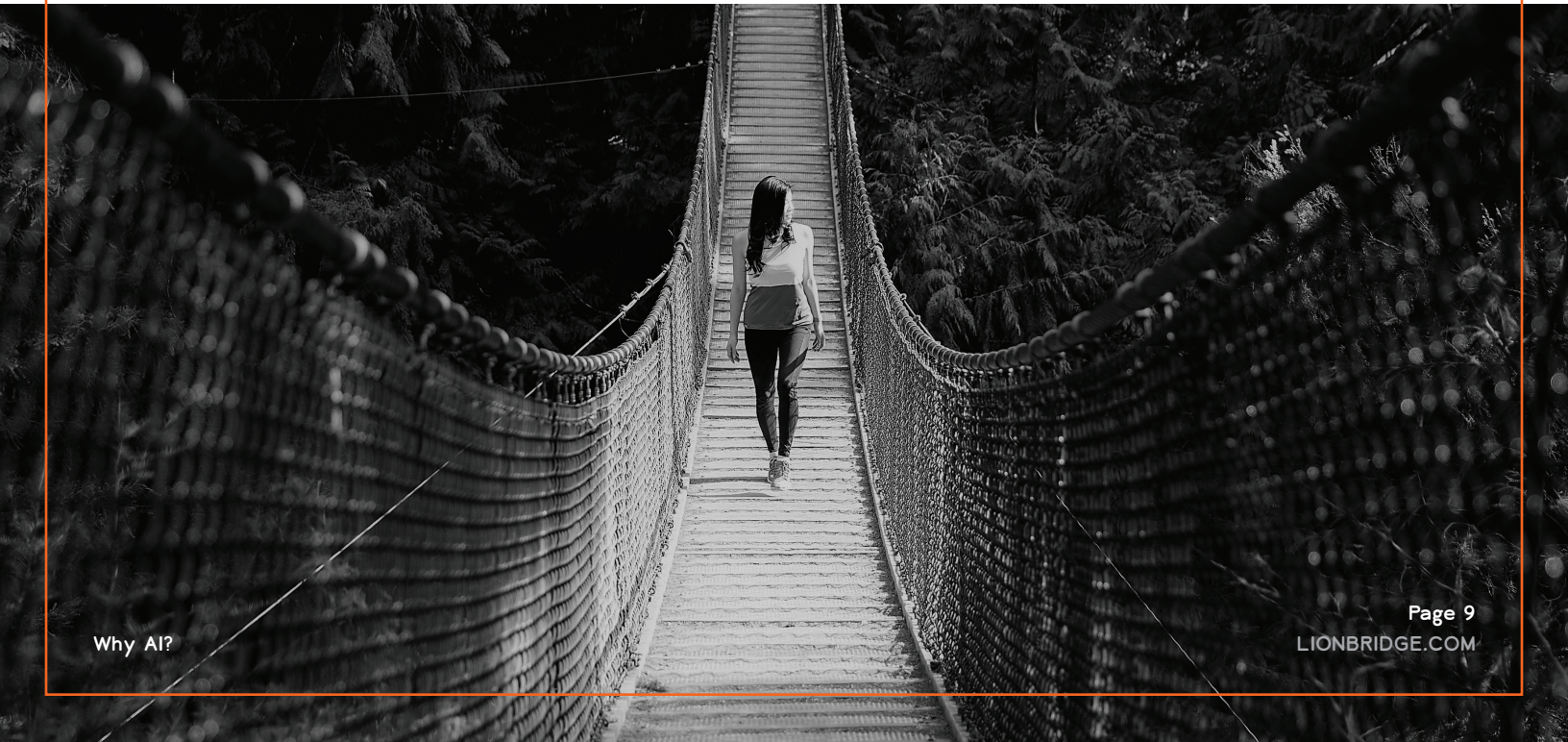


For decades, Lionbridge has been *the* partner with the team, expertise, and scale to solve our customers' problems. Initially, those problems fell squarely within a single category: translation and localization. Over time, though, they've expanded—and we've applied the same processes that made us the world's most trusted LSP to find a far-reaching range of solutions for our customers.

Today, our customers' problems transcend the need to translate text from one language to another. Customers need to ensure their devices work correctly around the world. They need to discover whether their multilingual marketing campaigns are converting in every market. They need to feed their algorithms huge volumes of high-quality data, so those systems can get smarter and work for everyone, everywhere.

Each of those customers is united by a common thread: **the need to connect company to end user**. Whether we're translating a page of content or teaching a voice assistant the nuances of the Spanish language, we're the company best-suited to build that bridge.

We rely on our lions around the world to serve our customers. 20-plus years in, we're just getting started. We don't know what new problems will emerge that our customers will call upon our global community to solve. We do know that, whatever comes our way, we'll be ready to break down barriers—linguistic, data-related, or otherwise—and build bridges.



About Lionbridge

Lionbridge partners with brands to break barriers and build bridges all over the world. For more than 20 years, we have helped companies connect with global customers by delivering marketing, testing and globalization services in more than 300 languages.

Through our world-class platform, we orchestrate a network of 500,000 passionate experts in 5,000-plus cities, who partner with brands to create culturally rich experiences. Relentless in our love of linguistics, we use the best of human and machine intelligence to forge understanding that resonates with our customers' customers. Based in Waltham, Mass., Lionbridge maintains solution centers in 27 countries.



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