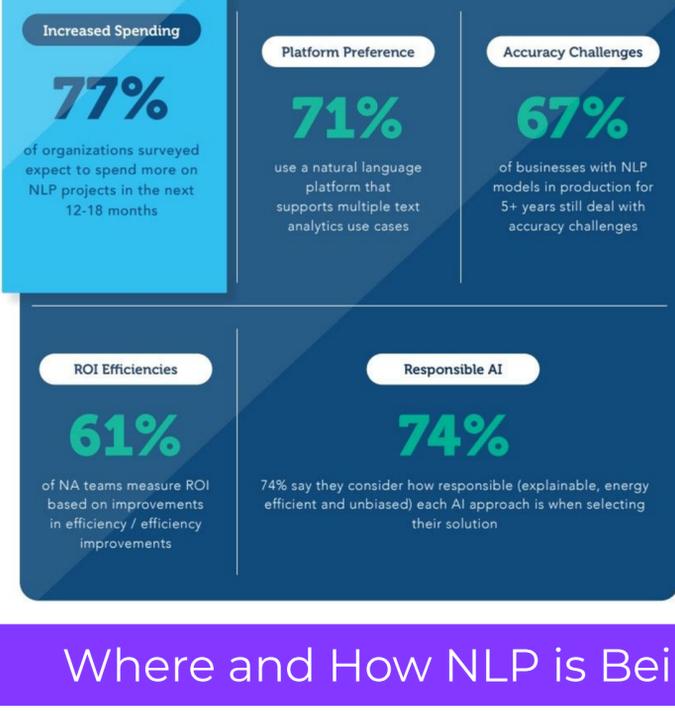


The 2023 Expert NLP Survey

Trends Driving NLP Investment and Innovation



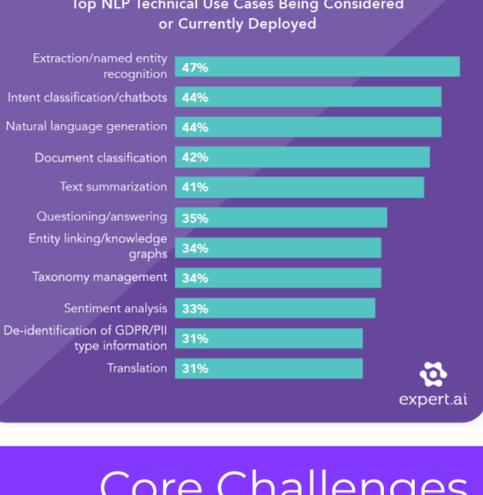
Investment in NLP is on the rise... the results show companies have a strong preference for:

- ✓ platforms that support **multiple use cases**
- ✓ use cases that **improve efficiency** and help them get to market faster
- ✓ and allow them to meet their core challenge of delivering highly **accurate results**

Where and How NLP is Being Deployed

Among organizations currently using or considering using NLP solutions, **47%** are looking to it to combat **data protection and governance** challenges

46% are using NLP for **knowledge management and classification**



Other functional business issues where NLP is providing solutions include:

44% Chatbots and smart assistants

43% Process automation that requires language extraction



Core Challenges in NLP Deployment

The **top two challenges** faced by businesses when adopting an NLP solution:

38% aligning with various stakeholders on which cases to prioritize

38% the costs associated with NLP modelling and tools

Where an organization is on its NLP development journey affects the main challenges it faces.

Top 3 Challenges by NLP Maturity Level		
Evaluation and experimentation phase (no NLP models in production)	Early phase NLP implementation (under two years in production)	More mature NLP models (two years-plus in production)
Data security and governance	Aligning with business stakeholders on which NLP uses cases to prioritize/governance	Building the business case/ ROI for NLP projects
Building the business case/ ROI for NLP projects	Data security and governance	Achieving the level of accuracy/quality needed to put NLP models in production
Choosing which artificial intelligence approaches to use to achieve the desired model result	Costs associated with NLP modeling and tools	Costs associated with NLP modeling and tools

The Most Popular Methodologies

For NLP use cases currently in production:

52% of respondents use a mixed machine learning and symbolic/rules-based approach

79% employ machine learning with either deep learning or graph AI

6% use ML alone

77% of respondents are encouraged to try different AI approaches when working on NLP projects

74% of respondents consider how responsible each AI approach is when selecting their solution

Benefits of using a **HYBRID APPROACH** that combines ML and symbolic:

- ✓ Delivers highly accurate results in situations where little training data is available
- ✓ Is much more cost effective and energy efficient than computation-heavy ML alone or neural networks
- ✓ Improves explainability and is more predictable than ML-only approaches
- ✓ Codifies domain and processes specific knowledge by including SME feedback directly in the rules

Top Attributes by NLP Solution Type

Most Desirable Attributes by Type of NLP Solution			
Cloud	Platform	Point Solution	Open Source
Machine Learning AI Approach	Model development and maintenance capabilities	Symbolic AI Approach	Natural Language Understanding capability
Out-of-the-box Knowledge Models	Process Automation Integration with RPA	Technical Performance and Scalability	Process Automation Integration with RPA
Technical Performance and Scalability	Integrated natural language workflow depth and flexibility	Multi-language support	Out-of-the-box packaged solutions
Integrated natural language workflow depth and flexibility	Ability to support multiple use cases	Natural Language Understanding support	Integrated natural language workflow depth and flexibility
Ability to support multiple use cases	Out-of-the-box packaged solutions	Model development and maintenance capabilities	Technical Performance and Scalability

The most common reason for choosing NLP platforms are their model development and maintenance capabilities:

47%

Many of those using open-source NLP software prioritize the NL understanding capabilities:

44%



Tracking ROI of NLP

More than half of the organizations surveyed measure the ROI for NLP based on one or more of the following factors:

54%
TIME TO PRODUCTION

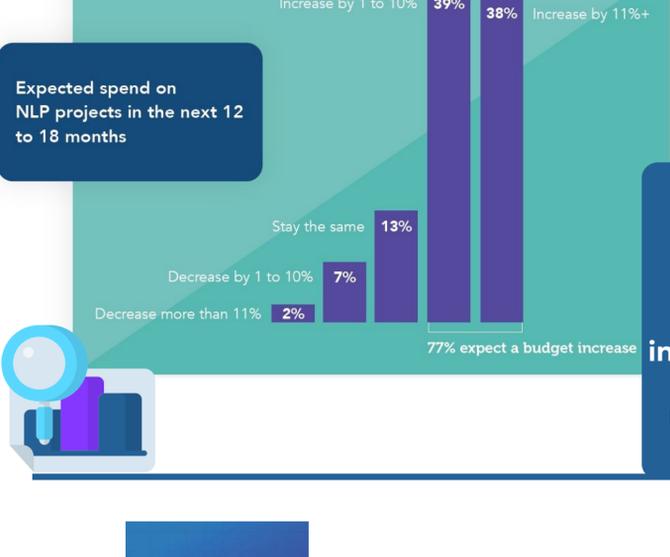
53%
EFFICIENCY IMPROVEMENTS

53%
COST REDUCTION



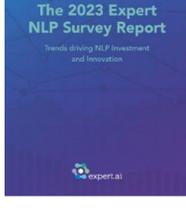
37% of businesses surveyed cited building the ROI case for NLP projects as an impediment to adopting the technology.

Increased Investment in NLP Spending



86% of NLP teams with models in production 2+ years plan to spend more on NLP

At every stage of their NLP journey, businesses are overwhelmingly looking to increase investment – and grow the number of NLP models in production.



Want to learn more?

DOWNLOAD THE REPORT

The survey was conducted in 2022 among **150 NLP practitioners** with active or planned projects. Research took place across the USA and Europe and the interviews were conducted online by **AI JOURNAL** and **Sapio Research**.



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