ISG Provider Lens™

Intelligent Automation – Platforms and Products

A research report comparing platform provider strengths, challenges and competitive differentiators.

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Executive Summary

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Various RPA solutions are converging into a platform.

Intelligent automation is now a mainstream technology spanning across enterprise portfolios. The evolution of RPA platforms in the past decade has been astounding, and the technology is now a vital constituent for driving digital business transformation. Core RPA characteristics are being integrated into platforms for building advanced products and capabilities. These platforms converge proprietary capabilities, emerging technologies and third-party solutions to develop a unique value proposition. This continuously evolving category acts as a differentiator and is one of the significant developments in the software vendor market.

With the increase in digitalization and end-user expectations, enterprises are compelled to provide on-time resolution for service continuity. Technology teams are building AI capabilities and components to improve communication quality and effectiveness across all interaction points. However, deploying flow-based conversational assistants is complex and perplexing due to the multilayer data fabric and intelligence models. Business transaction, user and system data are leveraged to address industry and function-specific queries. The technology teams working on designing intelligent automation solutions are exploring new and unconventional approaches. One such example is learning from continuous streaming of audio-visual data generated by regional sources to understand the dialects of a language for improving accuracy and relevance. Domain ontologies are being

Intelligent automation is modernizing business activity.

assembled for specific industries' verticals to enable conversational engines and simultaneously support business users and customers to enhance engagement and efficiency. The aim is to conduct human-like interactions to address and predict customer wearies and requests.

Conversational AI

Strong year-over-year growth for conversational AI solutions is expected to continue. North America is projected to have the largest market size owing to the increasing demand for enhancing customer experience and retention initiatives among enterprises in the region. Technology giants in the U.S. are acquiring AI capabilities and product companies to strengthen their offerings portfolio. The U.S. has been at the forefront of technology, being a leader in applications for AI patents.

The most common and preferred enterprise applications of AI is for conversational interface or bots. Chatbots increasingly use text and voice to communicate via business apps. However, conversations are getting complex, multi-layered and flow-based with the improvement task open for all functional and technical teams. To address this, conversational structures are used to design interactional experiences between users and businesses to ensure prompt and accurate information provisioning. These conversational interfaces can make recommendations based on past preferences, user choices, records and interactions. Conversational platform and product companies are ambitiously working towards incorporating voice and text capabilities, enabling stronger interactions and greater engagement across all stakeholder segments.

This typically involves integrating machine learning, natural language processing (NLP) and speech-based technology into a single platform that engineers can use to develop and build applications across various business functions, adding the flavor of proprietary components.

The convergence of conversational AI and intelligent automation has created a new stream of applications across different industries to create an unmatched experience for businesses and enterprises. Furthermore, it enables users to interact with technology, leveraging NLP to make cognitive business decisions. However, the use of only conversational capability solves a limited set of use cases. When complemented by automation, the value increases multifold and improvises business outcomes.

Intelligent document processing (IDP)

Digitalization of business information and conversion of transactional knowledge into a digital format is not only the priority but a step towards environmental sensitivity. The conversion of analog data formats to machine-readable and consumable structures improves the productivity, accuracy and archiving of information, elevating the concept of information on demand.

IDP involves analyzing and processing unstructured and structured data to drive actionable insights and provide end-to-end automation to the document-centric business process. In addition, data can be documented in various forms, including paper documents, faxes, emails, PDFs, attachments and Microsoft Office files and stored in different locations (on-premises or cloud).

Therefore, it is vital that all documents are processed intelligently so that business information can benefit the organization by cost effectively and efficiently integrating IDP into its workflow.

IDP adoption is increasing at an equal pace as other AI and machine learning-based technologies. Nevertheless, the IDP platform market will be valued above $5 billion by 2023 according to one market study. The primary reason for the cautious adoption is the lack of awareness of such platforms and their capabilities. Enterprises often misapprehend IDP platforms and their benefits to document capturing, indexing and labeling, but the capability extends to extraction, parsing and restructuring. Additionally, the ever-changing compliance and regulatory environment is a significant factor for its calibrated growth.

IDP components are crucial to transform paper and digital documents into structured extracted data at every step of processing. Document capture is an integral part of the platform as it ingests raw data by scanning the entire document. The IDP platform utilizes computer vision and image processing techniques to identify and extract data from various document types. Integrating several AI capabilities and automation has several applications in the real world across different industries. IDP vendors have built industry vertical products and kits to resolve perennial challenges in handling documents.

Process discovery and mining (PD&M)

Enterprise process optimization focuses on refining processes and attributes, as it is necessary to identify areas where the automation and reengineering of tasks are essential to avert effort, efficiency and accuracy leakages. In addition, processes are the carriers of business information that change with methods, modes and mediums of interactions. Therefore, any inefficiency in the process directly impacts business outcomes and customer experience.

Process discovery and task mining are synonymous terms that focus on capturing the extrinsic actions and activities executed for the input or output of a task. These are a combination of actions and information through a system interface to complete a transaction. Process mining extends the capability of identifying, analyzing and establishing a pattern in the intrinsic system and user data through machine learning and deep learning algorithms. A set of algorithms constantly analyzes and learn from the patterns to present an inference to simplify, optimize and enhance the process outcomes.

Business process management and advanced capabilities are increasingly gaining prominence in the process discovery and mining space. These capabilities add value, improvise how processes are executed in an environment, and capture variations to identify the underlying pattern. Predictive analytics has played a significant role in flagging deviations. However, prescriptive analytics is a beneficial and niche area that helps with calculated and calibrated directions.

Automation platforms converging with AI and machine learning technologies can simplify business processes across

all corporate functions to improve the overall business efficiency. In addition, reducing repetitive tasks can allow the workforce to focus on the operational goals and improve the overall process by reducing downtime, minimizing human errors and saving costs. All these benefits will ensure that adoption of intelligent automation platforms will proliferate along with more intelligent applications across all industries.

Human-like intelligence in conversational patterns drives customer experience and employee productivity.

Provider Positioning

	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
[24]7.ai	Leader	Not In	Not In
ABBYY	Not In	Leader	Leader
Acuvate	Product Challenger	Not In	Not In
Aivo	Contender	Not In	Not In
AWS	Leader	Not In	Not In
Amelia	Leader	Not In	Not In
AntWorks	Not In	Leader	Not In
Appian	Not In	Not In	Product Challenger
Apromore	Not In	Not In	Rising Star ★
Artificial Solutions	Product Challenger	Not In	Not In

Provider Positioning

	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
Automation Anywhere	Not In	Leader	Not In
Avaamo	Leader	Not In	Not In
BIS (Grooper)	Not In	Market Challenger	Not In
Botminds AI	Not In	Contender	Not In
BusinessOptix	Not In	Not In	Contender
Celonis	Not In	Not In	Leader
Cognigy	Leader	Not In	Not In
Cortical.io	Not In	Contender	Not In
Creative Virtual	Product Challenger	Not In	Not In
Datamatics	Not In	Product Challenger	Not In

Provider Positioning

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	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
Druid	Product Challenger	Not In	Not In
eGain	Contender	Not In	Not In
Epiance	Not In	Not In	Product Challenger
Everflow	Not In	Not In	Contender
FortressIQ	Not In	Not In	Leader
Fosfor	Not In	Rising Star ★	Not In
Google Dialogflow	Leader	Not In	Not In
HCLTech Software	Not In	Leader	Not In
Hyperscience	Not In	Product Challenger	Not In
i3systems	Not In	Contender	Not In

Provider Positioning

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	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
IBM	Leader	Not In	Product Challenger
Inbenta	Contender	Not In	Not In
Infrrd	Not In	Leader	Not In
ITyX	Not In	Contender	Not In
Kanverse.ai	Not In	Contender	Not In
Kofax	Not In	Leader	Not In
Kofax Insight	Not In	Not In	Product Challenger
Kore.ai	Leader	Not In	Not In
Livejourney	Not In	Not In	Product Challenger
LivePerson	Market Challenger	Not In	Not In

Provider Positioning

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	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
Logpickr (iGrafx)	Not In	Not In	Contender
Microsoft	Leader	Not In	Not In
Minit	Not In	Not In	Leader
Nanonets	Not In	Contender	Not In
NICE	Market Challenger	Not In	Not In
Nintex	Not In	Not In	Product Challenger
Nividous	Not In	Product Challenger	Not In
Omilia	Rising Star ★	Not In	Not In
OneReach.ai	Product Challenger	Not In	Not In
Openstream	Product Challenger	Not In	Not In

Provider Positioning

Provider Positioning

	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
Parascript	Not In	Leader	Not In
Pypestream	Product Challenger	Not In	Not In
qBotica	Not In	Contender	Not In
Rossum	Not In	Product Challenger	Not In
SAP Signavio	Not In	Not In	Leader
Senseforth.ai	Product Challenger	Not In	Not In
Sinch Chatlayer	Product Challenger	Not In	Not In
Singularity Systems	Not In	Product Challenger	Not In
Software AG	Not In	Not In	Leader
Soroco	Not In	Not In	Leader

Provider Positioning

	Conversational AI Platforms	Intelligent Document Processing	Process Discovery and Mining
StereoLOGIC	Not In	Not In	Contender
Straive	Not In	Contender	Not In
UiPath	Not In	Leader	Leader
UST SmartOps	Not In	Product Challenger	Not In
Visualyze.AI	Not In	Contender	Not In
WorkFusion	Not In	Leader	Not In
Worksoft	Not In	Not In	Contender

This study focuses on the critical aspects of Intelligent Automation - Platforms and Products for 2022.
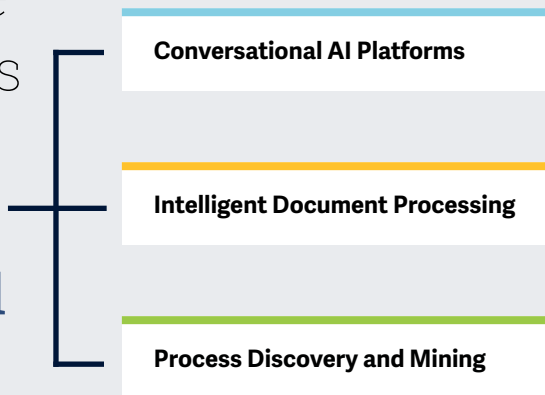
Simplified Illustration Source: ISG 2022

Conversational AI Platforms

Intelligent Document Processing

Process Discovery and Mining

Definition

Spurred by the shift to online working and consumption during the pandemic, intelligent automation technologies have become increasingly important for business transformation in enterprises of all sizes. Backed by more powerful machine learning algorithms and specialized capabilities such as computer vision, intelligent automation platforms and products are now being applied to all areas of business, consumer and employee. They involve data-intensive processes such as invoicing and export compliance, managing healthcare records and helping consumers apply for a mortgage or a loan extension.

Three distinct but increasingly overlapping technologies stand at the forefront of the intelligent automation revolution. Conversational AI platforms, sometimes referred to as chatbots or virtual agents, use NLP and machine learning to engage in natural or human-like interactions with customers or employees. IDP uses computer vision and image extraction capabilities to accurately digitize, analyze and automate large volumes of structured and unstructured data from electronic and paper-based forms. Process discovery and task mining consist of a range of tools to help enterprises better understand and optimize their processes and tasks, either from log data analysis or by tracking human actions.

With the market evolving rapidly, enterprise decision-makers now have access to a wide range of intelligent automation products and platforms, from out-of-the-box and on-premises to cloud-based models. They should determine how different solutions will integrate with existing business processes and automation technologies while keeping in mind compliance and regulatory requirements. They must also consider how different solutions support their citizen developer and self-service initiatives among other factors.

Scope of the Report

In this ISG Provider Lens™ quadrant study, ISG includes the following three quadrants: conversational AI platforms; intelligent document processing; and process discovery and mining.

This ISG Provider Lens™ study offers IT-decision makers:

Transparency on the strengths and weaknesses of relevant providers

A differentiated positioning of providers by segments

Focus on the U.S. market

Our study serves as the basis for important decision-making in terms of positioning, key relationships and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their existing vendor relationships and potential engagements.

Provider Classifications

The provider position reflects the suitability of platform providers for a defined market segment (quadrant). Without further additions, the position always applies to all company sizes classes and industries. In case the requirements from enterprise customers differ and the spectrum of platform providers operating in the local market is sufficiently wide, a further differentiation of the providers by performance is made according to the target group for platforms and products. In doing so, ISG either considers the customers' industry requirements or the number of employees and the corporate structures, and positions platform providers according to their focus area. As a result, ISG differentiates them, if necessary, into two client target groups that are defined as follows:

- **Midmarket:** Companies with 100 to 4,999 employees or revenues between $20 million and $999 million with central headquarters in the respective country, usually privately owned.

- **Large Accounts:** Multinational companies with more than 5,000 employees or revenue above $1 billion, with activities worldwide and globally distributed decision-making structures.

The ISG Provider Lens™ quadrants are created using an evaluation matrix containing four segments (Leader, Product Challenger, Market Challenger and Contender), and the providers are positioned accordingly. Each ISG Provider Lens quadrant may include a provider(s) which ISG believes has strong potential to move into the Leader quadrant. This type of provider can be classified as a Rising Star.

Number of providers in each quadrant: ISG rates and positions the most relevant providers according to the scope of the report for each quadrant and limits the maximum of providers per quadrant to 25 (exceptions are possible).

Provider Classifications: Quadrant Key

Product Challengers offer a product and service portfolio that reflect excellent service and technology stacks. These providers and vendors deliver an unmatched broad and deep range of capabilities. They show evidence of investing to enhance their market presence and competitive strengths.

Leaders have a comprehensive product and service offering, a strong market presence and established competitive position. The product portfolios and competitive strategies of Leaders are strongly positioned to win business in the markets covered by the study. The Leaders also represent innovative strength and competitive stability.

★ **Rising Stars** have promising portfolios or the market experience to become a Leader, including the required roadmap and adequate focus on key market trends and customer requirements. Rising Stars also have excellent management and understanding of the local market in the studied region. These vendors and service providers give evidence of significant progress toward their goals in the last 12 months. ISG expects Rising Stars to reach the Leader quadrant within the next 12 to 24 months if they continue their delivery of above-average market impact and strength of innovation.

Not in means the service provider or vendor was not included in this quadrant. Among the possible reasons for this designation: ISG could not obtain enough information to position the company; the company does not provide the relevant service or solution as defined for each quadrant of a study; or the company did not meet the eligibility criteria for the study quadrant. Omission from the quadrant does not imply that the service provider or vendor does not offer or plan to offer this service or solution.

Contenders offer services and products meeting the evaluation criteria that qualifies them to be included in the IPL quadrant. These promising service providers or vendors show evidence of rapidly investing in products/services and a follow sensible market approach with a goal of becoming a Product or Market Challenger within 12 to 18 months.

Market Challengers have a strong presence in the market and offer a significant edge over other vendors and providers based on competitive strength. Often, Market Challengers are the established and well-known vendors in the regions or vertical markets covered in the study.

Conversational AI Platforms

Conversational AI Platforms

Who Should Read This

This quadrant report is relevant to U.S. enterprises for evaluating the providers of conversational AI (ConAI) platforms. In this report, ISG highlights the market positioning of ConAI platform providers in the U.S. and shows how each provider addresses the challenges faced by enterprises. Enterprises can use the report to understand market dynamics and explore the new capabilities of incumbent providers. The report can also help evaluate new providers that support enterprises with their digital transformation initiatives.

In a mature market like the U.S., most enterprises have already implemented some forms of chatbots or ConAI as a part of their digital transformation efforts. However, they now face challenges such as handling complex omnichannel conversations, scaling to the enterprise level, resource constraints and integration issues with backend systems.

North America remains the largest market for ConAI solutions, with the U.S. being the largest contributor. Factors such as surging demand for AI-powered customer support services, technological advances of AI and machine learning, the growing adoption of voice assistants and the focus on customer engagement are driving the ConAI market in the region.

Enterprises in the U.S. seek providers that can address their concerns and facilitate human-like conversations with conversational intelligence on a single platform.

To mitigate challenges and fulfill clients' needs, providers are offering domain-specific solutions, embedded sentiment analysis, flexible integrations and seamless omnichannel experiences, as well as extending low-code/no-code tools.

Strategy professionals should read this report to understand the relative positioning and capabilities of providers that can assist them with end-to-end ConAI solutions to enable higher efficiency and effectiveness.

Digital professionals should read this report to understand how ConAI solutions fit their digital transformation initiatives and how providers are compared to each other.

Technology professionals should read this report to understand how ConAI providers integrate the latest technologies and capabilities, such as deep learning, natural language understanding (NLU), and sentiment and intent analysis, to enhance customer and employee experience.

Procurement professionals should read this report to have a better understanding of the current landscape of ConAI providers in the U.S.

ISG Provider Lens™

Source: ISG RESEARCH

**Intelligent Automation – Platforms and Products
Conversational AI Platforms**

U.S. 2022

PORTFOLIO ATTRACTIVENESS

H

Product Challenger

Openstream

Artificial Solutions

OneReach.ai

Sinch Chatlayer

Druid

Acuvate

Pypestream

Creative Virtual

Senseforth.ai

Omilia ★

eGain

Contender

Aivo

Inbenta

Google Dialogflow

Amelia

IBM

Microsoft

AWS

Kore.ai

[24]7.ai

Cognigy

Avaamo

Leader

NICE

LivePerson

Market Challenger

L

L   **COMPETITIVE STRENGTH**   H

★ Rising Star

This quadrant evaluates the capability, functionality and maturity of the ConAI platform providers in developing solutions for business and service functions. The solutions leverage **machine learning, deep learning and analytics** to enhance the **customer experience**.

Ashwin Gaidhani

Conversational AI Platforms

Definition

This quadrant includes software providers that offer conversational AI solutions to foster a development environment, along with APIs for automated conversational agents. These solutions integrate with chat interfaces such as messaging platforms and social media platforms, allowing third-party extensions and customizations. Conversational AI solutions interact with users through text or voice akin to humans. These applications run on programmable commands and AI technologies and are commonly classified as chatbots and virtual assistants. They represent an efficient way of handling communication with users. For example, they do this by automating standard response and keyword searches from a database.

They use NLP and machine learning technologies for sentiment analysis to understand a user's mood, emotions or attitude. These solutions can process increasing volumes of data, including unstructured data, based on search algorithms and data classification approaches. Within an enterprise's internal environment, conversational AI solutions, by way of virtual assistants, help employees interact with their digital workplaces. In an external customer-facing environment, they provide chatbots and voice assistants for customer support and marketing initiatives.

Eligibility Criteria

1. **Multi-environment deployment capabilities:** Solution designed and deployed by the vendor on-premises or on the cloud

2. **Offer solutions in the following formats:** User self-service to create chatbots or virtual assistants with the requisite coding skills or as a solution, where the vendor or its partners offer consulting service to an enterprise to customize the final product

3. **Support bots for a variety of services:** Solutions that support the creation of chatbots and virtual agents for both customer-facing services or internal services such as HR or IT support

4. **Citizen development:** Support for no-code/low-code activities

5. **NLP capabilities:** Solutions that have proprietary natural language processing capabilities or support third-party NLP

6. **Support multi-environment input:** Solutions that provide virtual assistants for both text and audio modes

7. **Standalone products or solutions:** Solution must be available for purchase or use on a standalone basis and not be tied to a wider managed service offering

Conversational AI Platforms

Observations

Enterprises are adopting conversational AI solutions to create an enduring customer experience and increase the engagement rate of clients and customers. Therefore, the market presents numerous opportunities for conversational platforms and application providers in the value chain. Furthermore, in the post-pandemic era, the focus on customer engagement for increasing market penetration and profitability is one of the significant areas explored by application and platform providers.

Apple, Google and Microsoft had acquired approximately 34 AI-based companies by 2020. Data collection, customer insight, customer/patient scheduling, home assistants, insurance premium and payments reminders, customer service, conversational marketing and lead generation are typical applications of conversational AI-based chatbots.

For example, Google Cloud made the Vertex AI platform available, thereby accelerating the deployment of AI models. Microsoft acquired an AI-based technology company, Nuance Communications, to boost its voice recognition and transcription technology. AWS recently added the Amazon Lex chatbot integration to Amazon Connect.

Other trends in this market are as follows:

- Conversation is not only limited to human-to-machine interfaces but gradually extends to machine-to-machine conversations for establishing system-level interaction – a game changer in this space.

- Most enterprises are actively working towards incorporating voice as the mainstream communication medium.

- Omnichannel deployment has reduced the cost of service per interaction, which is a strong case for developing advanced solutions.

- Though market demand and business interest have influenced many conversational solutions over the year, the lack of deep technology awareness among enterprises and security concerns are major factors that hinder the adoption of conversational AI platforms.

From the 98 companies assessed for this study, 24 have qualified for this quadrant with nine being Leaders and one Rising Star.

[24]7.ai

[24]7.ai delivers enterprise-grade, business-relevant consumer interaction services. It uses AI-based infused chatbots and agent services to enhance the customer experience. The platform reduces the cost per interaction, improves containment and Net Promoter Score (NPS) and speeds digital adoption. Predictable pricing helps accelerate time to value and enhances resolution.

Amelia

Amelia adds the immersive aspects of human interaction to almost every conversation, adding expression, emotion and understanding. The company is the industry's premier digital employee and conversational AI solution, fostering deeper relationships and increasing corporate value.

Conversational AI Platforms

Avaamo

Avaamo is powered by recent advancements in neural networks, voice synthesis and deep learning. This allows it to extend pre-existing verticalized models and robust domain-based models. Pre-built connectors, accelerators and conversation analytics expedite time-to-value.

AWS

AWS extends a platform for building conversational interfaces with any application using voice and text. In addition, it provides advanced deep learning features for auto speech recognition and natural language understanding (NLU), enabling enterprises to build engaging applications.

COGNIGY

Cognigy focuses on enhancing customer self-service by integrating accurate and engaging responses by retaining personal touch throughout the conversation. It also simplifies the process of creating and deploying AI chat and voice assistants at scale.

Google Dialogflow

Google Dialogflow manages dialog with proficiency, utilizing NLP models and the subtleties of human speech. It converts end-user text or voice and text into structured data that applications can consume quickly and accurately. It also improves conversation quality with the latest BERT-based NLU models.

IBM

IBM's AI-based Watson Assistant allows for building, training and deploying conversational interactions across a broad set of business verticals, applications, devices and channels. It offers a built-in connection to various digital channels, enabling a seamless flow of conversation.

Kore.ai

Kore.ai focuses on AI-enhanced conversational solutions to reintroduce quicker, more human-like interactions with a broad set of business customers, employee functions and systems. Its digital chat interfaces (solutions) are one of the leading enterprise-grade conversational solutions in the market.

Microsoft

Microsoft's Azure offers a bot framework to create a multimodal experience. It provides an integrated low-code/no-code platform for bot development. The seamless integration of Azure bot services and Power virtual agents enables diverse teams to design bots.

Omilia

Omilia (Rising Star) authenticates consumers using their biometric voiceprint when they interact with a virtual agent. Omilia's authentication and anti-fraud offerings help decrease the average handling time (AHT), leading to increased customer and agent satisfaction. The platform digitalizes conversations across the retail, utilities, insurance and banking industries.

Intelligent Document Processing

Who Should Read This

This report is relevant to enterprises in the U.S. for evaluating intelligent document processing (IDP) platform providers. In this report, ISG highlights the market positioning of IDP platform providers in the U.S. and shows how each provider addresses the challenges faced by enterprises. Enterprises can use the report to understand market dynamics, explore the new capabilities offered by incumbent providers or evaluate new providers.

Enterprises in the U.S. have adopted IDP solutions to handle large data volumes with different data templates and quality. However, some of the challenges they still face are processing unstructured data, poor document quality, longer time to value and data accuracy issues.

The U.S. is the largest market for intelligent automation, and IDP remains a core component of intelligent automation.

IDP solutions help enterprises handle large volumes of data and achieve higher efficiency and business resiliency. Among the factors driving the IDP market in the U.S. are the wide application of AI and automation, processing of unstructured data, growing use cases beyond financial services and healthcare, IDP as a service and pre-built models for faster deployment.

Enterprises seek providers that can address their concerns around the scalability, accuracy and efficiency of IDP solutions. Providers have started augmenting their IDP offerings by leveraging AI and machine models, advanced optical character recognition (OCR), computer vision and various NLP methods to offer a template-independent approach, inbuilt pre-processing modules, data contextualization and touchless IDP processing.

Strategy professionals should read this report to understand the relative positioning of IDP providers that can deliver higher efficiency and accuracy. The report also highlights the technical and integration capabilities of platform providers as well as their strategic partnerships.

Digital professionals should read this report to understand how providers of IDP solutions fit their intelligent-automation-led digital transformation initiatives and how they are compared with each other.

Technology professionals should read this report to understand how IDP technology providers are integrating multiple technologies, such as computer vision, OCR, NLP and machine learning, into their offerings and how, subsequently, the technical capabilities of these providers can be compared with the rest of the market.
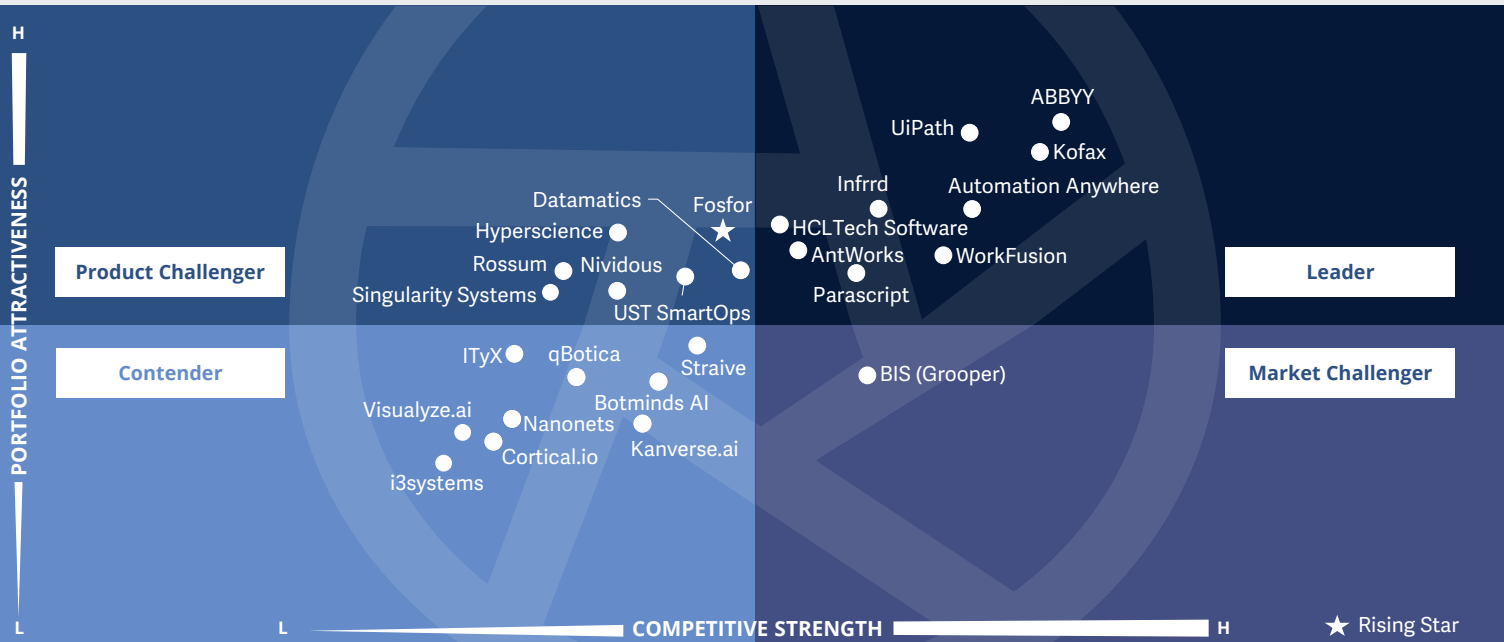
Procurement professionals should read this report to have a better understanding of the current landscape of IDP platform providers in the U.S. and their suitability for requests for proposals (RFPs).

ISG Provider Lens™

Source: ISG RESEARCH

Intelligent Automation - Platforms and Products 2022
Intelligent Document Processing

U.S. 2022

H

PORTFOLIO ATTRACTIVENESS

Product Challenger

ABBYY
UiPath
Kofax
Infrrd   Automation Anywhere
Datamatics   Fosfor
Hyperscience   HCLTech Software
Rossum   Nividous   AntWorks   WorkFusion
Singularity Systems   Parascript
UST SmartOps

Leader

Contender

ITyX   qBotica
Straive
Visualyze.ai   BIS (Grooper)
Nanonets   Botminds AI
Cortical.io   Kanverse.ai
i3systems

Market Challenger

L

L   **COMPETITIVE STRENGTH**   H   ★ Rising Star

This quadrant assesses the ability of IDP software providers to **process business documents with accuracy and ease**. The increasing complexity in the type and content of document **drives innovation** in this space.

Ashwin Gaidhani

Definition

This quadrant focuses on software providers that offer proprietary software products or solutions for the automated discovery, analysis and processing of documents across an organization. Going beyond traditional optical character recognition (OCR), intelligent data processing (IDP) software uses AI technologies such as natural language processing (NLP), machine learning, computer vision and deep learning to filter and analyze large volumes structured and unstructured data from multiple formats, such as email, PDFs, Excel, Word or images for further processing, storage and use in other applications. These tools support the digitalization of the entire document processing workflow across business processes by eliminating the touchpoints that require manual intervention.

Such IDP solutions not only aim at enabling companies to reduce costs but also to increase workforce productivity, improve accuracy, ensure compliance and enhance customer satisfaction.

Eligibility Criteria

1. **Standalone products/ solutions:** Offer IDP solutions as standalone products/ solutions for independent licensing to customers in the assessed region

2. **Design and development of product/solution:** Offered as either an out-of-the-box solution with pre-built modules or as a custom solution based on client requirements

3. **Multi-environment deployment capabilities:** Vendor on-premises or in the cloud

4. **Advanced analytics usage:** Offer detailed document analytics, consolidated and secure document gateways, and robust audit and compliance trails

5. **Customization and personalization of solutions:** Out-of-the-box APIs, multi-tenancy and secure deployment of platforms; support for low-code/citizen development

6. **Demonstrate comprehensive integration capabilities:** Ability to support integration with internal enterprise applications, existing IT infrastructure and third-party automation platforms

7. **Technology partnerships:** Established or emerging partnerships with providers of complementary technologies such as conversational AI, RPA, IDP and business intelligence

8. **Industry or function-specific solutions:** Vertical and/or function-specific IDP solutions

Observations

Document types have been evolving through time, and businesses have figured out solutions to transform them in line with the prevailing complexity and available technology. Hard copies (analog/paper) to soft copies (digital) and now a file as code can be encrypted and used in any format on any platform. Emerging technology and application systems are infusing intelligent components to improvise the document processing capability from alphanumeric text to architectural designs, shapes and scripts. The current developments in the space are:

- The increasingly noticed capabilities are OCR for recognizing text and written data, NLP for identifying different data sections, classification of data and extraction (NLU), and expanding the capability to articulate and represent the data in directed formant (NLG).

- IDP platforms predominantly use cloud as the primary platform for hosting the IDP product and related processing, extraction and storage activities.

- IDP platform vendors are taking a smarter approach when adding new capabilities versus developing in-house. Most of the IDP activity capability components exist in the market and are relatively mature.

- A stronger focus is on pricing and consumption models that bring accuracy and are driven by value and performance rather than unit or volume based.

- Software product vendors are aggressively expanding the option to convert data from any document format to any digital medium to extract data and build intelligence.

- Understanding the business needs, compliance requirements and constraints is critical for establishing a suitable IT and digital architecture that includes the capabilities and activities to process simple and complex documents.

From the 98 companies assessed for this study, 26 have qualified for this quadrant with nine being Leaders and one Rising Star.

ABBYY

ABBYY Vantage captures data insights from various documents to present better business results. It captures and validates the information in any format to turn papers into business value. Vantage intelligently digitizes and automates document processes to reduce risk and expense and drive revenue for a competitive advantage.

AntWorks

AntWorks' pattern recognition helps clients to avoid challenges associated with document structure and format variability to capture data accurately. The CMR+ solution integrates AI techniques such as deep learning, NLP capabilities and machine vision to organize, extract and authenticate multiple data types.

Automation Anywhere

Automation Anywhere IQ Bot automates document processing activities without the assistance of data scientists or AI professionals, making it one of the market-leading IDP solutions. IQ Bot creates machine-readable files and validates them against the traditional system, saving time and effort.

HCLTech

HCLTech Software's EXACTO offers intelligent data extraction to speed up the processing of invoices. Designed especially for financial processes, the solution uses deep neural networking and NLP for data extraction from various document types and invoices.

Infrrd

Infrrd's IDP platform allows for scanning and extraction of data from a wide range of documents through a structured nine-step process flow covering machine-human-machine handover. Its intelligent data capture function includes AI-driven deep learning and machine learning algorithms for automating complex business document processing.

Kofax

Kofax IDP is a sophisticated AI and automation solution for handling unstructured data. It transforms document processes from capture through OCR, NLP, categorization and separation. The platform can integrate with a broad set of business systems ranging from CRM to ERP systems.

Parascript FormXtra.AI is an intelligent document processing and recognition platform that classifies, locates, extracts and validates documents. The advanced functionality locates, extracts and verifies machine print, table data, pictures such as signatures and logos and all types of handwriting, including constrained and unconstrained handprint and cursive.

UiPath

UiPath's document understanding offering covers RPA, AI and document processing to collectively extract and interpret information from a wide range of documents. The platform leverages the functionality to bring pre-trained models to deployment.

WorkFusion

WorkFusion is an intelligent document processing platform that recognizes and processes handwriting, signatures and complex or low-quality documents. Its out-of-the-box machine learning algorithms handle structured and unstructured documents. WorkFusion also offers real-time tuning of models for accuracy, with support in more than 40 languages.

Fosfor

Fosfor's Aspect is a no-code document processing platform that puts the power of AI in the hands of business users, enabling them to employ deep learning to extract data from documents for process automation and knowledge mining. Aspect can also handle enterprise-level document complexity in text or image-based formats.

ABBYY

"ABBYY Vantage is one of the most advanced and comprehensive IDP management platforms."

Ashwin Gaidhani

Overview

ABBYY is a global intelligent automation company that offers a suite of intelligent automation products including Vantage, Timeline, FlexiCapture, FineReader, Mobile Capture and several SDKs along with professional services. ABBYY has more than 30 years of expertise in the market and serves more than 10,000 enterprise clients across the financial services, healthcare, insurance, government, transportation and logistics, legal and other industries. It has more than 1,200 employees in 15 countries.

Strengths

Mature document processing capabilities: With the release of ABBYY Vantage 2.2 in June 2022, the company has expanded and enhanced its industry-leading IDP capabilities into more than 100 assets.

Platform with pretrained capabilities: The pre-trained capabilities of the platform ensure that the cycle time for developing new domain and function-specific use cases and solutions becomes faster in a non-linear manner. The pre-trained assets provide specific, curated knowledge-powered document clustering, classification, extraction and processing. The use cases are contextually smart, application-relevant and offer high accuracy sooner in early deployment cycles.

Ease of use supported by high accuracy: The focus on user experience and ease of use makes the platform one of the friendliest document processing solution development workbenches for trained professional coders, technologists and non-technical business and functional users. This low-code, no-code, contextually aware aspect of the platform makes the use cases easy to build and test directly by users themselves.

Caution

ABBYY has been leading the way in semantic document extraction and processing logic. Using this advantage to draw more focus on further R&D of core component APIs and domain-specific large language models can open up more blue ocean opportunities in this technology space.

Process Discovery and Mining

Process Discovery and Mining

Who Should Read This

This report is relevant to U.S. enterprises for evaluating process discovery and mining (PD&M) platform providers. In this report, ISG highlights the market positioning of PD&M platform providers in the U.S. and shows how each provider addresses the challenges faced by enterprises. Enterprises can use the report to understand market dynamics and competition, explore the new capabilities offered by incumbent providers or evaluate new providers.

Process discovery and process mining are seen as key enablers of intelligent automation and are now being undertaken at the very onset of any automation project. However, enterprises in the U.S. face challenges like data availability, data continuity, defining relevant KPIs, and data security and privacy concerns.

The global PD&M market has witnessed a surge in the demand for intelligent automation solutions, and the U.S. remained no exception. Enterprises are capitalizing on the potential of PD&M tools. Hence, they seek providers that offer end-to-end process views and insights, reduce the time for process initiatives, and ensure process compliance and security.

The demand for PD&M has attracted technology vendors, service providers and hyperscalers alike to acquire required capabilities. Hence, the market witnessed consolidation, with core players being acquired by larger entities. Providers are realigning their offerings for a more comprehensive process intelligence platform, covering process discovery, process mining, task mining and predictive analytics. They also offer domain-specific modules for faster deployments and flexible commercial models.

Strategy professionals should read this report to understand the relative positioning and capabilities of technology providers that can deliver PD&M solutions with higher efficiency and effectiveness.

Digital professionals should read this report to understand how providers of PD&M solutions fit their digital transformation initiatives and how they are compared with one another.

Technology professionals should read this report to understand how PD&M platform providers augment their offerings with complementary technologies such as RPA, NLP, machine learning and business intelligence for end-to-end process automation.
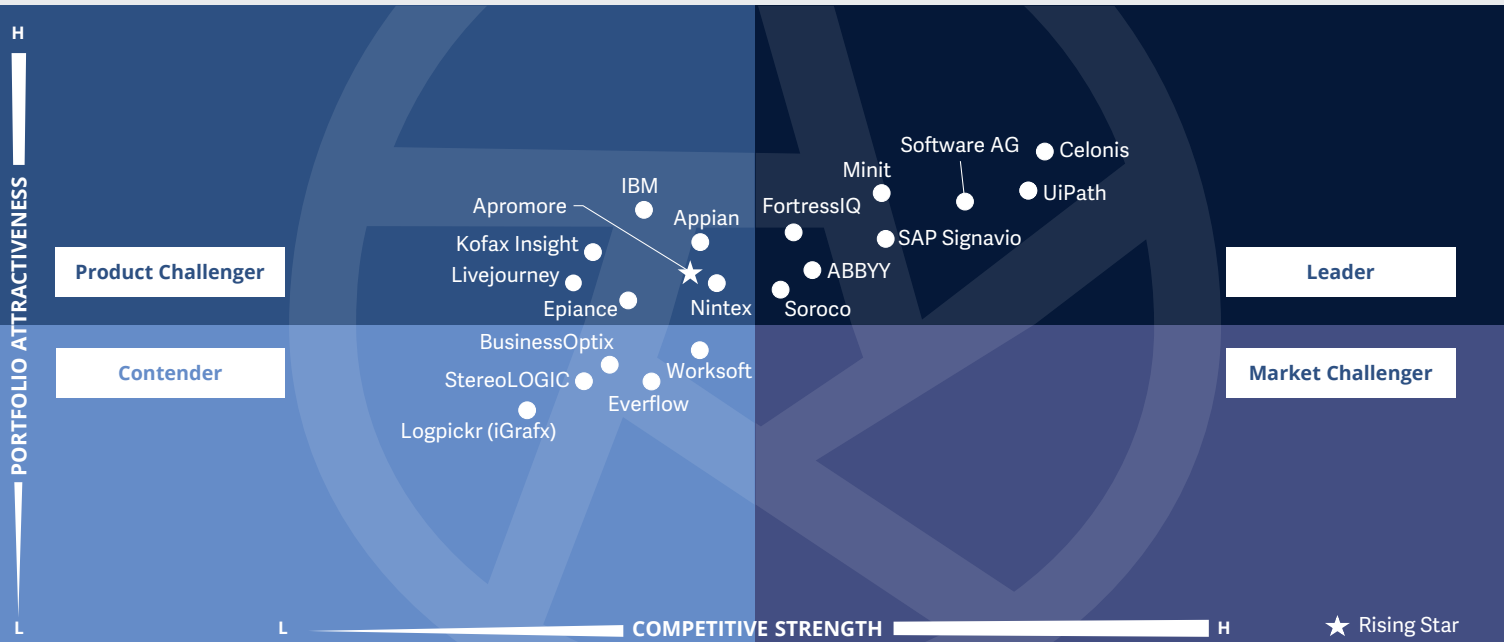
Procurement professionals should read this report to have a better understanding of the current landscape of PD&M platform providers in the U.S. and their suitability for RFPs.

ISG Provider Lens™

Intelligent Automation – Platforms and Products
Process Discovery and Mining

U.S. 2022

H

PORTFOLIO ATTRACTIVENESS

Product Challenger

IBM

Apromore

Appian

Kofax Insight

Livejourney

Epiance   Nintex

Contender

BusinessOptix

StereoLOGIC

Worksoft

Everflow

Logpickr (iGrafx)

Software AG   Celonis

Minit   UiPath

FortressIQ

SAP Signavio

ABBYY

Soroco

Leader

Market Challenger

L

L   **COMPETITIVE STRENGTH**   H

★ Rising Star

This quadrant assesses process discovery and mining software providers on their ability to capture a business activity at every layer of transaction. The **combined value of process discovery and mining** defines the trajectory of new advanced solutions.

Ashwin Gaidhani

Process Discovery and Mining

Definition

This quadrant focuses on software providers that offer proprietary software platforms, tools and associated services to help clients automatically discover, monitor and improve real-time processes from event logs (usually called process discovery) and user actions to carry out specific tasks (usually referred to as task mining). Two of the key reasons preventing companies from realizing ROI on automation are the poor identification of use cases and the inclination to automate processes as is. To gain the benefits of automation, processes must be assessed through multiple lenses with the help of process discovery and task mining technologies. Process discovery is key to proving automation opportunities and benefits.

The use of process mining solutions is aimed at not only eliminating inefficiencies in business operations and paving the way for reduced costs but also improving workforce productivity and enhancing customer experience.

Eligibility Criteria

1. **Standalone products/ solutions:** Offers either process discovery or task mining solutions, or both; solutions as stand-alone products or solutions for independent licensing to customers in the assessed region

2. **Multi-environment deployment capabilities:** Product designed and deployed by the vendor on-premises or in the cloud

3. **Customization and personalization of solutions:** Must be capable of offering out-of-the-box APIs, multi-tenancy and secured deployment of platforms; support for no-code/low-code activities

4. **Demonstrate comprehensive integration capabilities:** Support integration with various enterprise applications

5. **Automation opportunity assessment capabilities:** Demonstrate capabilities in opportunity assessment for facilitating automation and strong advisory capabilities

6. **Frameworks, methodologies and best practices:** Utilize industry best practices, templates and techniques

7. **Technology partnerships:** Established or emerging partnerships with providers of complementary technologies such as conversational AI, RPA, IDP and business intelligence

Observations

With process discovery and process mining converging to deliver comprehensive value, several acquisitions have been taking place in this space. Process mining and automation capability complement each other, minimizing routine human intervention in the process.

Process discovery expands the capability to capture workflows across technology, corporate and business domains. Business vertical-specific (manufacturing, telecom business processes), technology-dependent processes (cloud for infrastructure or application) and function-aligned processes (contact center) competencies are being incorporated into the platforms as prebuilt and configured packages with infused intelligence.

The involvement and role of business process management (BPM) in process discovery and mining is reaching a

strategic level to improvise process efficiency by optimizing the processes and capturing their multiple iterations to identify the deviation points backed by quantitative data.

In addition, most of the process discovery and mining platforms are transforming the design methods by converting the components and attributes to a GUI interface and taking the low-code/no-code approach.

With the significant advances in AI, companies are gearing towards the use of combined process mining solutions to maximize business benefits.

From the 98 companies assessed for this study, 20 have qualified for this quadrant with eight being Leaders and one Rising Star.

ABBYY

ABBYY Timeline includes powerful process and task-mining technologies based on the latest improvements and developments in AI. It allows enterprises to automatically create an interactive digital twin of their processes, evaluate them in real time to detect bottlenecks and anticipate future results to support technology investment decisions.

Celonis

Celonis is a market leader in the process discovery and mining domain. Some of the recent and strategic acquisitions have helped the company enhance its portfolio maturity and develop a strong set of solutions. Celonis is also expanding its partnership with large enterprises to resolve and refine execution management and adoption.

FortressIQ

FortressIQ helps enterprises refine their strategy by automating the process through the mature process discovery platform across the enterprise portfolio covering technology, organizational and business processes. This provides scale and precision and amplifies the customer value, helping enterprises to meet their objectives.

minit

Minit uses the event log to reconstruct the business process in its current state automatically. Algorithms for process mining aggregate events and examine their temporal sequence, correlations and performance. They simplify the data and classify it to make it feasible to infer all pertinent information.

Process Discovery and Mining

SAP Signavio

SAP Signavio is particularly notable for its smart analysis, change management and solutions. The web-based business transformation solutions from the portfolio assist enterprises in quickly and efficiently improving their business processes.

Software AG

Software AG provides comprehensive insights across broad industry verticals, including IoT, supply chain and customer support. The features and functionalities present the discovery of trends, anomalies and possibilities for improvement by understanding the process data and their dependencies within Software AG's proprietary ARIS process mining software.

Soroco

Soroco provides a deeper view of processes through the Scout platform, which captures the traces of executed tasks that are not visible and tackled at the backend. Work graph that is created by understanding the flow and interaction of work at every layer and point helps map activities that are usually missed or lost.

UiPath

UiPath's acquisition of Re:infer has added the mature capability of a communication mining platform that can capture, contextualize and translate messages by using advanced proprietary models. Businesses can use this platform for a broad set of industries and functions to connect various products and services.

apromore

Apromore (Rising Star) can integrate with any business application environment. Its simple API, rigorous support for common exchange types and open-source kernel allow it to integrate smoothly with various systems, eliminating vendor lock-in.
A few of its features are the market's most evolved process mining algorithms.

ABBYY

Leader

"ABBYY Timeline has cognitive abilities to identify, organize and analyze processes autonomously."

Ashwin Gaidhani

Overview

ABBYY is a global intelligent automation company that offers a suite of intelligent automation products including Vantage, Timeline, FlexiCapture, FineReader, Mobile Capture and several SDKs along with professional services. ABBYY has over 30 years of expertise in the market and serves more than 10,000 enterprise clients across banking, financial services and insurance (BFSI), healthcare, government, transportation and logistics, legal and other industries. It has more than 1,200 employees in 15 countries.

Strengths

Detects, organizes and presents end-to-end customer business processes: ABBYY Timeline 5.3 helps clients visualize and understand their process data and data flows. The platform can detect, organize and show end-to-end customer business processes. Client teams can detect hidden performance leaks, bottlenecks, error causes and inefficiencies.

Advanced task mining analytics: The Timeline solution leverages the digital twins concept for processes and allows for multiple alternative pathways to be recreated, reimagined, simulated and tested to improve and optimize process efficiencies and outcomes.

Visualization mechanism for users to track process flows: The platform can identify path variations and trigger autonomous, intelligent and optionally human-augmented recommendations for potential improvement areas and opportunities. These features make process reengineering a practice not just for architects and systems experts but also for process owners and teams that may not have in-depth systems training.

Caution

ABBYY Timeline is an advanced process mining solution that enables end-to-end process management end practice when combined with the document management products. However, this may create an unintended and unplanned lock-in situation that can constrain a client's ability to try disruptively innovative products from smaller organizations and startups in this space.

Appendix

Methodology & Team

The ISG Provider Lens™ 2022 – Intelligent Automation – Platforms and Products study analyzes the relevant software vendors/ providers in the U.S. market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology.

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The research and analysis presented in this report includes research from the ISG Provider Lens program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers and analysis of publicly available market information from multiple sources. The data collected for this report represents information that ISG believes to be current as of October 2022, for providers who actively participated as well as for providers who did not. ISG recognizes that many mergers and acquisitions have taken place since that time, but those changes are not reflected in this report.

All revenue references are in U.S. dollars ($US) unless noted.

The study was divided into the following steps:

1. Definition of Intelligent Automation – Platforms and Products market

2. Use of questionnaire-based surveys of service providers/ vendor across all trend topics

3. Interactive discussions with service providers/vendors on capabilities & use cases

4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)

5. Use of Star of Excellence CX-Data

6. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.

7. Use of the following key evaluation criteria:

   * Strategy & vision
   * Tech Innovation
   * Brand awareness and presence in the market
   * Sales and partner landscape
   * Breadth and depth of portfolio of services offered
   * CX and Recommendation

Author & Editor Biographies

Lead Author

Ashwin Gaidhani
Research Partner

Ashwin Gaidhani has a comprehensive view of IT shared-managed services portfolio and digital business transformation initiatives with approximately two decades of experience. As an ISG Research Partner and subject matter expert in the field of enterprise services and digital technologies, he is presently contributing as a Lead Author with the ISG Provider Lens™ team. Ashwin comes to this work with business and technology experience revolving around service management, digital governance, emerging capabilities (artificial intelligence and intelligent automation), work design methodologies, and implementation frameworks. He is a highly qualified and experienced ITIL Expert with lifecycle experience in operations, delivery, consulting and advisory for large corporations, including end-user, ITSP and Technology product companies. He effectively partners with C-Level executives and tactical leaders to institutionalize digital business transformation and strategic initiatives.

Enterprise Context and Global Overview

Mukesh Ranjan
Senior Analyst

Mukesh is a senior analyst with ISG, with a key interest in market and industry research across emerging technologies. He is responsible for supporting and co-authoring Provider Lens™ studies on intelligent automation, IoT, media and communication and others. His areas of expertise are automation, IoT and emerging technologies.

He is also involved in authoring enterprise context and the global summary report with market trends and insights. Mukesh has been part of several custom research engagements in areas of automation, competitive intelligence and others.

Enterprise Context and Global Overview

Hemant Chandak
Research Analyst

Hemant is a research analyst with ISG, with a key interest in market and industry research across emerging technologies. He is responsible for supporting Provider Lens™ studies on Intelligent Automation and Oil & Gas Services and Solutions among others. His areas of expertise are automation, telecom, IoT and technology research.

He is also involved in authoring enterprise context and the global summary report with market trends and insights. Hemant has been part of market, business research and strategy teams across a variety of leading companies in the past.

IPL Product Owner

Jan Erik Aase
Partner and Global Head – ISG Provider Lens™

Jan Erik Aase brings extensive experience in implementation and research for service integration and management of both IT and business processes. He has more than 35 years of experience, is highly skilled at analyzing vendor governance trends and methodologies, adept at identifying inefficiencies in current processes, and capable of advising the industry. Jan Erik has experience in all four sides of the sourcing and vendor governance lifecycle — as a client, an industry analyst, a service provider and an advisor.

Now as the Research Director, Principal Analyst and Global Head of ISG Provider Lens™, he is well positioned to assess and report on the state of the industry and make recommendations to both enterprises and service provider clients.

ISG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG's global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG's enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

For more information about ISG Provider Lens research, please visit this webpage.

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Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,300 digital-ready professionals operating in more than 20 countries— a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data. For more information, visit www.isg-one.com.

ISG Provider Lens™

REPORT: INTELLIGENT AUTOMATION – PLATFORMS AND PRODUCTS