



ABBYY

Founded 1989 | HQ Milpitas, CA | 1,500 employees (approx.) | \$150M revenue (est.)

ABBYY was founded as a high-volume intelligent capture software provider and has grown its international footprint to include offices in the US, Europe, and Asia. In 2019, ABBYY expanded its software beyond intelligent capture into intelligent process mining and discovery tools that utilize neural network technology. Both intelligent capture and intelligent process discovery are hot trends in the digital process automation market, making ABBYY an important company for enterprises to keep on their radar. ABBYY acquired TimelinePI in May 2019. This report focuses on the ABBYY Timeline product and evaluates the firm's positioning in the overall digital process automation marketplace.



The Company

ABBYY started in 1989 as an optical character recognition (OCR) company that sold its software to document-capture vendors. Since then, the firm's digital intelligence products have evolved into intelligent content and intelligent process automation solutions for businesspeople and developers. ABBYY has a long list of OEM partners for intelligent capture, including Brother, Dell, EMC, Fujitsu Xerox, Intuit, Konica Minolta, Microsoft, and Panasonic. Through its partners, ABBYY addresses a wide spectrum of industries, and its customers include well-known brands such as Banque Populaire de l'Ouest, McDonald's, PepsiCo, Volkswagen, and Yum. ABBYY is

now building upon its success in intelligent capture by expanding into the fast-growing process discovery and mining market for digital process automation. Its Timeline software is truly innovative and addresses an important need as companies seek to continuously (and intelligently) discover bottlenecks and improve upon highly dynamic, complex digital processes.



The Technology

Applying AI to complex business process activities makes sense, as the insights, predictions, and improvements that can be gleaned from analyzing the associated data are invaluable. No matter how well designed and managed they are, business processes are

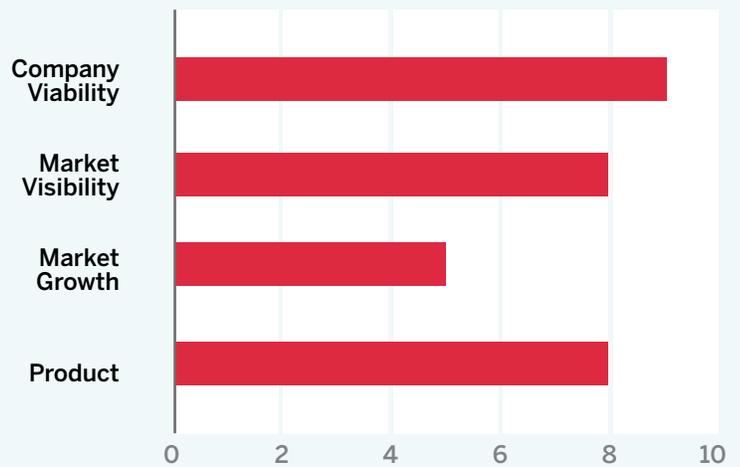
often unpredictable and can vary widely from the expected or planned process path. In truly complex case management implementations, each process can conceivably take a different path and vary greatly as to when and if the tasks are performed. The use of AI in process automation is widely talked about but rarely carried out.

Process automation vendors have long sought to bring more analysis and insights to process activities to improve their effectiveness, but efforts so far have been limited. ABBYY Timeline appears to have made serious inroads into this knotty situation, and its work to date is impressive, though it is clear that there is more to come.

In basic terms, Timeline extracts and reads the time stamps and details of any events that occur throughout a business process. It then visually models that data to reveal any irregularities. This system can be used to observe, optimize, and remediate processes – and process instances – in flight. Where things get particularly interesting is in Timeline's ability to run that information through machine learning modules to predict and forecast future outcomes. In other words, Timeline automates the analysis of the "as is" environment and can predict an improved "to be" environment.

To do this, Timeline captures a much wider range of data points than is the norm, both from the process engine itself and from associated and integrated applications. Collecting such a large amount of complex data for analysis would make a manual optimization effort cumbersome and costly, if not impossible. But that task is simplified by using machine learning that thrives on and learns from large volumes of data. This all makes a compelling case for using Timeline, but this AI-driven approach does have its limitations.

Figure 1
ABBYY Assessment



To work with such complex and ever-changing process data, the only logical AI approach is to use neural networks. However, by default neural networks are black box technologies that can be difficult – if not impossible – to unravel, making their use problematic in highly regulated industries such as healthcare. Fortunately, the Timeline developers have worked to make the neural networks explain themselves and expose their internal deliberations to the end user. This is a double-edged, though likely necessary, sword. In less critical situations, the neural network should be given sufficient training and exposure to data and then left alone to learn and adapt over time. This would enable it to deliver – quickly and accurately – improved results that would be impossible to deliver manually. Adding humans into the loop and essentially supervising the neural network is laudable and necessary in highly regulated environments, but effectively throttles back the neural network's full potential power. Even with this caveat, we would argue that this approach still takes Timeline's capabilities far beyond manual optimization efforts.

The Timeline user interface (UI) today is good and highly functional; it works well for process mining, monitoring, and analysis, with a feedback loop for continuous improvement. But we would like to see at least the option of a more creative approach to delivering Timeline's rich information. To be clear, there is nothing wrong with the Timeline UI, but such a radical and advanced approach to process mining and optimization deserves a more forward-looking visualization of those activities.

Timeline is a significant move beyond traditional process mining and analysis. But we can't help thinking that it could go further, and with the resources that ABBYY can bring to the product we expect it to do so in the future. Certainly, in Timeline's target markets in healthcare and highly regulated sectors, its ability to break boundaries is naturally limited by the need to introduce humans into the loop. But other sectors present the potential for more ambitious automation of process optimization through the use of AI and machine learning.

Our Opinion

It is early days for Timeline in its new home at ABBYY; it will take time for intelligent process mining to settle. Hopefully ABBYY will leverage its wide range of resources, not least of which are deep pockets for financial investment and a slew of patents to draw upon. But even Timeline's first incarnation is impressive and has the potential to go much further over the coming years. To repeat, AI is talked about a lot in process circles, but as of today its actual use and availability are limited and, quite frankly, unambitious.¹ This is largely because long-established process vendors will be challenged to reverse-engineer their installed base of customers. That is understandable, but it also leaves the door open for newcomers to enter

the market and raise the bar. That being said, we expect ABBYY to partner with established digital process automation vendors in going to market.

Figure 1 shows our assessment of ABBYY across four categories.



Advice to Buyers

For enterprises seeking advanced AI/ML functionality, the most likely go-to-market path for ABBYY Timeline is through OEM partnerships with digital process automation companies.² Those interested in moving ahead quickly with intelligent process mining/discovery who already have an installed process automation vendor can reach out to their provider to discuss the possibility of adding Timeline. Given the early state of the intelligent process automation market, it may also be possible and more straightforward to work directly with ABBYY. Another good alternative is to team with and use the services of a systems integration firm such as Deloitte. (Note: ABBYY is already teamed with Deloitte.) In any case, keep in mind that ABBYY Timeline is very new to the market and is installed at only a handful of companies.

When considering AI/ML for digital process automation, consider these potential areas to pursue with companies such as ABBYY, remembering that it is still very early days:

1. Analyzing workstreams for pattern recognition, determining the value of the different workstreams, and identifying the best pattern to use.
2. Combining case management data and business data to improve decision-making.
3. Using intelligence to recommend process design options during modeling (AI/ML assisted development).

4. Identifying and reusing global processes instead of building duplicates.
5. Analyzing process performance management data for inefficiencies and correcting them.
6. Using process mining to make predictions based on process models.
7. Using artificial intelligence to automate the creation of workflows.
8. Using natural language processing to create workflows from process maps.³

Endnotes

1 AI/ML usage in process automation and business processes is already happening in some industries. Examples include next best action, intelligent document capture, sentiment analysis, fraud detection, chatbots, and content creation.

2 See "State of the Digital Process Automation Market – Current Assessment 2019," <https://www.deep-analysis.net/report/state-of-the-digital-process-automation-market-current-assesment-2019/>

3 See "State of the Digital Process Automation Market – Trends 2020-2025," <https://www.deep-analysis.net/report/state-of-the-digital-process-automation-market-trends-2020-202/>

SOAR Analysis

Strengths

- Deep pockets for future investments
- Many high-profile OEM partners, ISVs, and customers
- Early to develop an intelligent process mining tool for analysis and continuous process improvement
- Innovative and compelling tool for companies seeking digital transformation through radical process re-creation and continuous improvement

Opportunities

- Ink OEM deals with leading process automation software vendors that are eagerly seeking AI/ML partners
- Leverage ABBYY's existing partners for intelligent content to also focus on Timeline
- Pursue partnerships with systems integrators that are taking a visionary stance toward AI/ML within processes
- Find a high-profile customer willing to work with ABBYY on testing, improving, and extending Timeline's functionality

Aspirations

- Bring Timeline to the market ahead of competitors to grab significant market share and multiple OEM partners
- Establish market visibility and leadership in intelligent process mining software
- Find a flagship customer willing to be a high-profile reference account

Results

- Finished the development of the Timeline product and now bringing it to the market
- Working to establish a beachhead in intelligent process mining and discovery

About Deep Analysis

Deep Analysis is an advisory firm that helps organizations understand and address the challenges of innovative and disruptive technologies in the enterprise software marketplace.

Its work is built on decades of experience in advising and consulting to global technology firms large and small, from IBM, Oracle, and HP to countless start-ups.

Led by Alan Pelz-Sharpe, the firm focuses on Information Management and the business application of Cloud, Artificial Intelligence, and Blockchain. Deep Analysis recently published the book "Practical Artificial Intelligence: An Enterprise Playbook," co-authored by Alan and Kashyap Kompella, outlining strategies for organizations to avoid pitfalls and successfully deploy AI.

Deep Analysis works with technology vendors to improve their understanding and provide actionable guidance on current and future market opportunities.

Yet, unlike traditional analyst firms, Deep Analysis takes a buyer-centric approach to its research and understands real-world buyer and market needs versus the "echo chamber" of the technology industry.

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About the Authors

Alan Pelz-Sharpe is the founder of Deep Analysis. He has over 25 years of experience in the IT industry, working with a wide variety of end-user organizations like FedEx, The Mayo Clinic, and Allstate, and vendors ranging from Oracle and IBM to start-ups around the world. Alan was formerly a Partner at The Real Story Group, Consulting Director at Indian Services firm Wipro, Research Director at 451, and VP for North America at industry analyst firm Ovum. He is regularly quoted in the press, including the *Wall Street Journal* and *The Guardian*, and has appeared on the BBC, CNBC, and ABC as an expert guest.

Connie Moore is Vice President and Principal Analyst at Deep Analysis. She joined the firm after four years as Senior Vice President, Research, at Digital Clarity Group, and more than twenty years as Research Director and Vice President at Forrester Research. Connie is a widely acclaimed speaker, advisor, consultant, and expert in digital process automation, customer experience management, digital experience platforms, and content services. In 2014 Connie received the Workflow Management Coalition's globally recognized Marvin Manheim Award for influence, contribution, and distinction based on standout contributions to the field of workflow and business process management.