IPsoft's Amelia: More Than a Chatbot

Finding the right use cases is key for optimizing implementations

Ovum view

Catalyst

IPsoft gathered customers, prospects, and analysts together in New York in June 2017 for a digital workforce summit event to launch Amelia 3.0, the latest release of its AI digital workforce platform, or AI-based virtual digital assistant (VDA). Customers shared their experiences of implementing Amelia. They were candid about the ways they chose to deploy Amelia, the opportunities they chose to pursue, the strategy they took inside the organization, and some of the challenges they faced. The collective wisdom of the front-runners in Amelia implementations indicates that organizations and their automation implementation partners need to take care in identifying what they want to automate and which technologies should be applied to which processes, then tackle the integration into other relevant systems, information sources, and user interfaces.

Ovum View

- Automation technologies and AI are bringing organizations into a new generation of work, with new roles and opportunities. Disparate technologies are gaining traction simultaneously: robotic process automation (RPA), chatbots, and artificial intelligence (AI) in its multiple emerging forms – spanning machine learning, deep learning, and intelligent analytics.
- Alternative ways of approaching work tasks are emerging to achieve some or all of the following objectives: reduce costs, improve the quality of work that human employees can fulfil, and support growth.
- Early users of IPsoft's Amelia, such as Swedish bank SEB, give their assurance that this technology can increase commercial advantage and improve customer interactions in activities like banking, insurance, and mortgage broking.
- These early use cases are centered in some repetitive data processing business environments, but according to IPsoft, the implementations to date establish that Amelia can handle over 60% of client requests without external assistance, achieving over 90% accuracy and customer satisfaction ranging up to 88%.

Recommendations

- **IPsoft should consider supporting and enabling an ecosystem of compatible products and applications.** Amelia is a user interface that is dependent on touchpoints with systems of record and systems of engagement to be useful. IPsoft would benefit in the long term from simplified touchpoints, whether built internally in a closed development environment or externally in an open development environment like Salesforce's AppExchange.
- **IT service providers need to build and maintain the currency and relevance of their automation toolkits.** They should examine and understand Amelia 3.0 from IPsoft and be prepared and trained to deploy where it is appropriate for customers' requirements.
- **Effective leadership is a critical component of successful automation.** The implementation of AI is not just a technology project. Ovum believes that project leadership in a consultative capacity is essential, along with approaching processes from a holistic

perspective, incorporating change management techniques and dispelling fear and resistance.

- **Design the overall solution using the best available technology, proprietary or not.** Software vendors are competing with IT services vendors in a highly competitive space. IT services companies are building ever-increasing volumes of proprietary IP, both for internal use as a means of achieving efficiency within managed services and for implementing with customers outside of managed services contracts.

Finding an impactful start point for automation

Ovum's 2016 ICT Enterprise Insights – a cross-vertical survey of enterprise users across the world – asked respondents about their investment plans for customer communications during the next 18 months. The three technologies most relevant for IPsoft's Amelia are intelligent virtual agents or automated chatbots, online web and mobile chat, and speech analytics. Almost 20% of respondents identified all three of these as technologies in which they are planning strategic investment.

Figure 1: Investment in customer communications
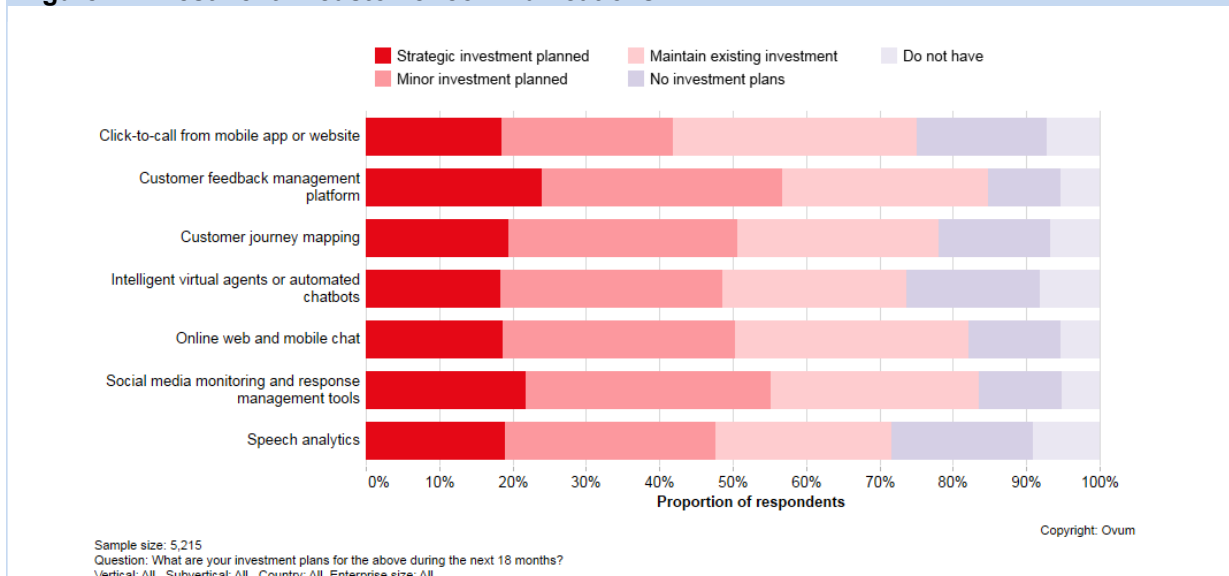
Source: Ovum's ICT Enterprise Insights

Confusing and overlapping terminology and the rapid pace of change present a daunting landscape to organizations looking to select and implement automation platforms. While the early adopters of IPsoft's AI technology used Amelia in sometimes very different ways, these customers yielded some common themes and insights.

The best start point for automation is where it is wanted

IPsoft Amelia customers were unanimous in advising others to focus first on the people. A typical pilot project is three months, according to IPsoft, but bigger organizations may take longer to deploy. The team that works on the pilot is critical to successful deployment throughout the organization – mainly through a cheerleading effect. Customers already on this journey advocated finding a department, group of people, or leader that is enthusiastic to deploy the technology. This buy-in from leaders, preferably senior enough to have influence in decision-making, is cited often by those making

headway with all forms of automation as the most critical success factor – coupled with the advice to avoid departments and areas that resist adoption until much later in the rollout.

The leadership of the automation project needs to manage change and fear

Education is the starting point for getting people on board and ensuring that they are open to affecting change. This includes teaching people to understand the difference between chatbots and AI and helping them to see and eventually spot opportunities for this technology to make improvements. Incentives matter, too. Some customers reported successful incentivization by giving key subject matter experts responsibility and ownership of project elements. Realism about the pitfalls and strengths of proposed solutions and their associated business cases was also considered important.

The most impactful areas for demonstrating success are the ones with measurable KPIs

Once the department or functional area is selected, the next step is to find the most impactful processes(s) to tackle within this domain. Again, Amelia customers were clear and unanimous: start small and build the right team, moving forward in phases gradually with employees and customers. Deploying an AI agent is not a technology project. It uses different approaches to creativity and problem solving than conventional software deployment. Good teams have a mix of product, process, and industry knowledge between them to tackle the individual processes competently. Amelia customers recommend small teams – no more than three people – with a mix of skills. The team needs to learn together, train Amelia, start driving business output, demonstrate improvements backed up by key performance indicators (KPIs), and become cheerleaders for the technology and catalysts for further rollout in the organization.

There are other upsides to putting processes under scrutiny. Processes evolve based on many contributing factors; past internal political issues or system-based limitations may melt away over time, but processes can take time to catch up. Re-examining processes can lead to surprising results, and simple changes can remove some of these legacy issues. Process streamlining or delivering better user training might move the needle as required.

Different automation technologies suit different tasks and processes

No single automation technology is likely to meet all automation needs. There will be a place for more than one solution type in most organizations. The ability to apply the right technology in the right way to the right problem is a product of the skills and experience of the implementation team. Product education and process understanding are both equally important, and the more specific the understanding of the process the better – both industry knowledge and in-house knowledge matter.

### Robotic process automation (RPA) works well in the back office, unattended

Banks and insurance companies are deploying RPA extensively to perform routine, repeatable, rules-based processes in a highly-regulated environment. RPA interactions are frequently processed in batches triggered by multiple instances of interactions; RPA bots usually kick in to perform processes that don't require an ongoing conversation, so they don't need to navigate complex human interactions.

Chatbots work well in the front office

Chatbots – software designed to simulate conversations with humans – are best deployed where there is a clearly defined scenario that is predictable and capable of being scripted in advance, with a clearly structured or predictable flow to the conversation; for example, answering frequently asked questions (FAQs) or engaging in chat interactions to process payments.

Cognitive agents' use cases span the whole organization

Figure 2: IPsoft's Amelia
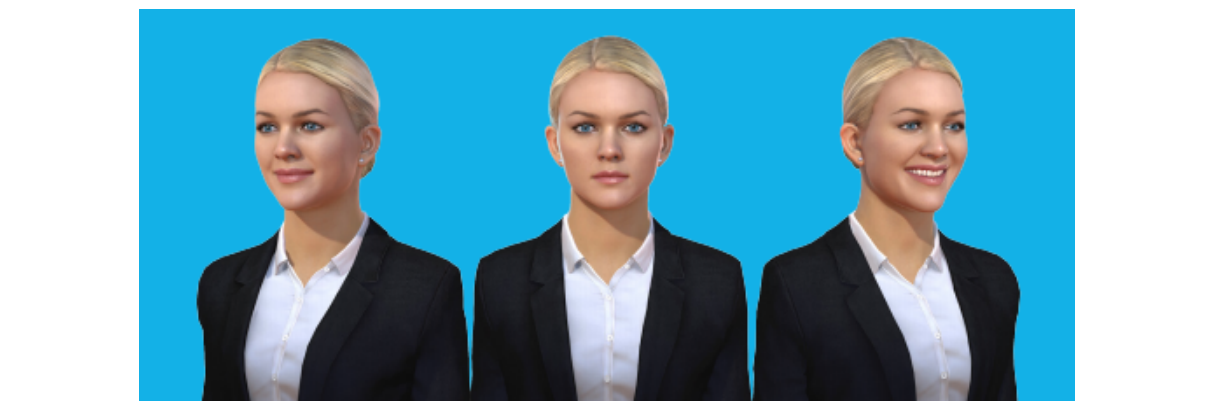
Source: IPsoft

IPsoft's chief cognitive officer, Edwin van Bommel, describes Amelia's cognitive and execution capabilities as going beyond a combination of both RPA and chatbots to a human level of artificial intelligence, digesting information into semantic memory and learning from interactions to recognize similar situations as they arise, utilizing episodic memory functions. Amelia has been designed to

- understand natural language with natural language processing (NLP)
- absorb information in text or .pdf form
- learn by following process maps created from prior interactions
- observe colleagues to discover optimal course of action
- apply supervised learning to address similar scenarios without human interaction.

The basic premise underlying IPsoft's Amelia technology is that most of the questions put to most organizations have been asked before. There is a collective intelligence resulting from the many interactions occurring that can be harnessed and learned from, with a view to continuous improvement. Amelia processes this using three ontologies that it follows: a process ontology helps to identify what Amelia needs to do and defines its path; a neural ontology helps it co-reference and understand what users are saying; and an emotional quotient (EQ) ontology helps it understand the sentiment and adjusts Amelia's responses.

See Ovum's *On the Radar: IPsoft delivers single, comprehensive AI platform* for a detailed walkthrough of the VDA features.

Aiming for more than "better, faster, cheaper" is advisable

IPsoft executives advocate aiming for something beyond the usual targets of "better, faster, cheaper," viewing competitors' chatbots and AI platforms as deployments that deliver cheaper but inferior customer experiences today. Rather than focusing on cost alone, alternative aims include

- saving human effort/drudgery

- achieving higher accuracy

- being compliant – with documented logs of activity

- assisting people who ask questions

- increasing service availability (potentially up to 24x7x365)

- helping customers

- increasing customer satisfaction rates

- helping agents by "whispering" useful upsell and cross-sell suggestions

- focusing on what the customer is asking for.

Amelia operates at the intersection point of organizations' data, systems, and customer engagement channels. Some direct connectors have been created to connect with commonly used enterprise platforms; Salesforce's and Workday's cloud-based platforms allow for better connectors to be created, while SAP's many platform versions require more effort.

Amelia can also work well when teamed with human beings as a digital assistant, passing queries or interactions that cannot be resolved within its remit to appropriate humans – with the relevant systems lookups already completed, thus saving time. IPsoft's customers spoke of augmenting staff rather than replacing staff.

IPsoft reports that Amelia is currently deployed by more than 50 global organizations. The agent can cover over 60% of client requests, achieving over 90% accuracy and customer satisfaction ranging up to 88%. Amelia can't necessarily handle 100% of cases, but the ones it handles it generally gets right; if it can't handle a case, it hands it off to a human.

Ideal use cases are neither too simple nor too complex

Amelia utilizes NLP in a natural, context-aware dialogue to understand the underlying meaning of statements and engage in fluid conversations in over 40 different languages. Today these conversations most usually occur over chat messaging platforms such as Slack chat. Catering for the ambiguity that is inherent in unscripted chat is usually labor intensive and expensive. The challenge is finding the right type of interactions to select for automation with Amelia. So far, Amelia has been deployed in customer service roles and IT helpdesks.

Process complexity matters too. Organizations need to find an optimal level of complexity with sufficient volume to merit the effort and investment of the project while utilizing Amelia's core capabilities of supervised automated learning, experience management, advanced analytics, smart workflows, and conversational intelligence.

SEB identified and prioritized tasks to find ideal starting point

SEB, a Swedish corporate bank, has a vision of being a world class service company – as opposed to merely a bank – and a track record in digital services innovation (e.g. early testbed for online and digital banking). The company is making efforts to bolster customer satisfaction in the face of branch closures. It is exactly the sort of enterprise the industry needs to see testing the potential for VDA-based AIs such as Amelia. SEB approached the challenge of use case selection by identifying and prioritizing 90 tasks that Amelia could potentially support, then proceeded with four impactful IT services desk use cases:

- unlocking Active Directory accounts

- unlocking accounts for a mortgage application for home loans
- providing password guidance
- supplying knowledge base answers to questions such as "how do I order remote access?"

See Table 1 below for other IPsoft Amelia use cases currently implemented or planned.

UBS deliberately chose to start with a challenging area

Despite the temptation to start with a small task such as password reset, UBS took a complex process dealing with retirement/death distribution documents and dealt with it first. On completion of this pilot there was a small team of cheerleaders who could generate interest through video and act as a catalyst for change throughout the rest of the organization. The state of mind "look forward, push forward" emerged, which is about pushing against barriers, being open and transparent about goals, building following and loyalty, and building confidence (and job security) with the front-line SMEs.

IPsoft's methodology to determine best use cases

IPsoft has put together digital masterclass templates entitled "Envisioning your Amelia journey." It is a methodology to help prospects define the Amelia vision for their organization, by identifying and aligning with the organization's key pillars in order to achieve their key objectives – for example, transforming the service desk with faster response times. The structured set of questions is intended to define potential value by calculating impact point totals; for example, the number of customers multiplied by the number of contact events per year identifies the "value at stake" for Amelia. "Amelia-relevant" scenarios and epics can then be prioritized for the organization.

Table 1 shows use cases in play (or planned) for IPsoft's Amelia.

Table 1: Amelia use cases

Client (Amelia function)	Use cases	Outcomes/intended outcomes
SEB, Nordic Bank (IT service desk agent)	Unlocking Active Directory accounts Unlocking accounts for a mortgage application for home loans Providing password guidance Supplying knowledge base answers to questions – e.g." How do I order remote access?"	Amelia's role covered business cases that make up 15% of the service desk volume Within three weeks Amelia handled 4,000 conversations with 700 employees
Enfield Council, UK (public service virtual agent) – in progress	Answering website queries (non-scripted) Pre-screening planning applications Providing self-certification for building plans that fall within specific parameters	Intended to allow the council to increase the volume of queries it supports for its ageing demographic and increasing population without increasing human resources
Unnamed global bank (mortgage broker agent)	Answering external mortgage brokers' queries Providing information about bank products and policies	At the end of the training period, Amelia could answer 120 of the full 160 questions with an 88% success rate
Unnamed oil and gas company (invoice query agent)	Answering invoicing queries from suppliers	During testing Amelia's successful resolution potential was estimated at 72% with less than eight weeks of on-the-job training and refinement
Unnamed US-based insurance company (digital service desk agent)	Verifying data (zip code, car model, year) and providing auto insurance quotes	More work planned to be passed to Amelia – e.g. 150 FAQs, dental insurance applications
Unnamed US-based media company (digital service desk agent)	Customer service assistance in resolving technical issues with internet, cable, and telephony services Amelia was trained to manage common requests including account unlock/reset, rate code investigations, porting telephone numbers, and access requests	It took three months to train Amelia to respond successfully to 64% of the queries. Results of pre-production trials showed mean time to resolution (MTTR) dropped from 18.2 minutes per query to 4.5 minutes per query. Similarly, average speed of answer waiting times fell from 55 seconds to 2 seconds
Unnamed insurance company (digital service desk agent)	Helping agents understand their role, providing advice, and assisting their learning, especially in new systems they need to use Guiding licensed agents through installing essential software Guiding insurance agents through which forms need to be compiled and submitted Helping end users work through a series of known steps to resolve common issues	Reduced new customer service center unlicensed agent training from 14 weeks to 10 weeks. Reduced new customer service center licensed agent training by 4 weeks. Reduced the average call handle time for new analysts (those that have been employed for fewer than 6 months) by more than a minute Amelia is being trained to assist with as many as 166,500 calls received monthly. As part of the pilot with just under 100 field agents, Amelia is resolving common queries and is being integrated with other systems – e.g. the policy and underwriting applications and IT service management tools including ServiceNow

Source: IPsoft

The longer-term strategy needs to be considered

Artificially intelligent and NLP-based chatbots are advancing in intelligence rapidly, but organizations need to ensure that this intelligence is being deployed strategically. Ultimately, if the main aim is speedy cost takeout, and the process(es) at hand could be fulfilled by a lighter solution – by creating simple web-based forms for self-service or by using RPA or scripted chatbots – IPsoft's Amelia would be overkill for the task at hand while simultaneously underutilizing the AI platform's capabilities.

Amelia's suitability is more likely to be maximized when deployed as part of organizations' broader strategic aims like improving the customer experience, or perhaps when enabling entirely different channels of user engagement – for example, voice-activated/headless user interfaces (HUIs) such as Amazon's Alexa. During the analyst event, Amelia was demonstrated connected to Alexa and could be engaged with the initial command of "Alexa, can I talk with Amelia?" This sort of deployment opens up the possibility of working toward ambient technology, a sci-fi scenario that is no longer quite so futuristic.

Appendix

Further reading

On the Radar: IPsoft delivers single, comprehensive AI platform, IT0020-000290 (June 2017)

Market Radar: AI-Assisted Chatbots for Customer Service, IT0020-000287(June 2017)

"In a converging self-service analytics market, a human approach is a logical differentiator," IT0014-003304 (July 2017)

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