ASML supports employees with AI-enabled Virtual Agent

We appreciate ServiceNow’s investment in innovation in process automation.

Ramon de Bruijn, Manager, Enterprise Service Management Center of Excellence and Innovation, ASML

A remarkable journey of growth

ASML is the world’s only manufacturer of some of the most advanced equipment critical to the production of silicon microchips, the building blocks of so much of today’s digital technology.

In just 38 years ASML has grown from a start-up to a powerhouse, multinational company, employing more than 32,000 people in 16 countries across Europe, Asia, and the U.S. Some of the world’s finest creative brains are deployed to design and build the photolithography systems at the heart of silicon microchip production.

Industry:
Telecommunications, Media, and Technology

Location:
The Netherlands

People:
+ 32,000 employees

Products:
• IT Service Management Pro
• Virtual Agent
• Advanced Work Assignment
The photolithography machines ASML supplies to customers like Intel and Samsung contain around 100,000 components, with transportation requiring 40 freight containers, three cargo planes, and 20 trucks.

ServiceNow has been supporting ASML on its remarkable growth journey since 2008, contributing in recent years to its ongoing digital transformation program, focusing on automating business processes to unlock additional agility, efficiency, and productivity benefits.

To this end ASML standardized on ServiceNow IT Service Management as its strategic, enterprise-wide platform delivering consistent, centrally controlled IT support, via a self-service portal, with the capability and flexibility to cater for the very different needs of a highly diverse workforce.

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Beau Chaitram, Product Owner ServiceNow, ASML

New ways to provide IT services and support

By 2020 the company was onboarding 200 new recruits every month. As a result, finding new ways to deliver great IT services and support for its rapidly expanding and geographically dispersed teams was vitally important.

“Every day, our IT service desk handles around 1,000 support tickets from employees and contractors worldwide,” explains Ramon de Bruijn, ASML’s Enterprise Service Management Center of Excellence and Innovation Manager. “Our goal was to find new ways to support our colleagues, providing a consumer-grade experience and instant access to all the information they need to focus on their core role and to be as productive as possible.

“By reducing call and email volumes, we could give precious time back to our 200 first line service desk engineers, freeing them for higher value projects and innovations, rather than on password resets or providing access to SAP.”
ASML’s most important recruit

ASML’s solution to this challenge was the arrival of Violet, a ServiceNow Virtual Agent, providing 24/7 support, instant answers to questions, and connecting users to more information to make their working lives easier. Just months after her arrival, Violet is helping ASML’s employees worldwide to get the best out of IT services and support.

The success of Violet is testament to the power of ServiceNow’s AI-enabled conversational chatbot automation technology and to the commitment of ASML to chatbot development best practice, creating the ideal Virtual Agent persona that could deliver a high-quality user experience.

Ramon and colleague Beau Chaitram, ASML’s ServiceNow Product Owner, brought together a multi-disciplinary team of companywide stakeholders to ensure that the needs of the company’s diverse user groups were fully understood and catered for in the solution.

“In their early years, chatbots felt robotic and not very clever,” says Beau. “Today, a well-designed ServiceNow chatbot offers a high-quality user experience, recognizing what you need and responding in an engaging way. You don’t feel like you are talking to a robot anymore.

“We wanted a name for our Virtual Agent that our people would feel an instant connection to. Violet comes from the ultraviolet light in our production process, and, to give her a human feel, we built a persona imagining what she would be like if she were a real person.

“We wanted her to be professional and efficient, warm, and friendly, someone people would trust to help them solve their problems. Also, we wanted her to be aware of her own limitations with the ability to connect users to our other channels, including humans, when necessary.”

ServiceNow has helped us to demonstrate the tremendous value that Violet can deliver for the business – and it’s a template we can extend to repetitive processes in many other operational areas.

Ramon de Bruijn, Manager, Enterprise Service Management Center of Excellence and Innovation, ASML

200 first line service desk engineers freed for higher value projects and innovations.
Extensive usability testing

The development program featured extensive usability testing at every stage, involving 3,000 employees across ASML's business units, providing detailed feedback for user experience specialists to analyze and develop new features and functionality.

Live testing sessions were observed by multiple stakeholders to see how users were interacting with Violet, which topics were most popular and where information gaps existed, producing valuable insights to streamline the user experience. Social media platforms were used to conduct surveys of users to inform the team’s choices and decision making, with the name of Violet herself selected this way.

A specialist user experience copywriter was engaged to ensure that every conversation with Violet, conducted in English, used consistent language for ease of understanding within every topic, important for those with limited use of English.

Simplifying complexity

“ServiceNow’s documentation, videos, deployment guides, and Virtual Agent Academy sessions were very helpful during this process,” explains Beau.

These insights prompted ASML to take a very thorough and measured approach to the development of Violet, perfecting a limited number of topics first, enabling more to be added later with confidence.

Similarly, early versions of Violet were keyword-based, before moving onto more sophisticated Natural Language Understanding (NLU), in which AI is deployed to analyze and understand users’ intent, based on a few words or statements made during the conversation with Violet.

An integration with Microsoft Teams enables direct access to Violet at any time, a valuable feature for remote employees working on conference calls. Conversational analytics dashboards that reveal the most and least used conversations are showing a pleasing alignment with the intelligence gathered during the research and user testing phases.

And, while interacting with Violet, if a user wishes to speak directly to a service desk engineer, they can initiate that human contact by selecting Agent Chat. Almost 80% of connections to Agent Chat are accepted within one minute, exceeding the service level agreement.

Another feature deployed by ASML is ServiceNow Advanced Work Assignment, which matches inquiries through Violet to the right subject matter expert, with the skills and capacity to respond.

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Beau Chaitram, Product Owner ServiceNow
ASML
Transformational results

Within weeks of launch, more than 6,000 employees were connecting with Violet, with user satisfaction scores exceeding 80%. The predictability rate — the ability of Violet to correctly diagnose the user’s intent and direct them to the correct topic, based on a few initial words — stood at an impressive 90%.

“This is only the first version of Violet,” says Beau. “We’ll continue our journey to make her even more sophisticated by improving the advanced analytics (AI) technology and by expanding our knowledge base.”

“Knowledge management is vital,” agrees Ramon. “Violet can only use the information she has access to, so we must keep feeding her with more and more, and deflection rates will continue to rise as a result.”

Template for all employee requirements

In the future, Ramon and Beau believe Violet will play a key role supporting employee issues and questions beyond IT, by becoming the Virtual Agent for ASML’s People Portal, the company’s hub for all employee-related matters, such as a parental leave request, a facilities reservation, or an IT question.

Ramon concludes: “ServiceNow has helped us to demonstrate the tremendous value that Violet can deliver for the business — and it’s a template we can extend to repetitive processes in many other operational areas.

“We appreciate ServiceNow’s investment in innovation in process automation, they’re always coming up with new things, new capabilities. We follow these developments closely and the flow of these new capabilities provide tremendous ongoing benefits for us.”