B-Yond

Delivering AI-powered automation solutions to CSPs that optimize and monetize their networks

AGILITY: AI-Powered
Network Life Cycle Automation

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Sponsored by Oracle for Startups program

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About this report

Based on direct interviews with the COO, Rikard Kjellberg, and extensive access to detailed information, this brief report introduces B-Yond, one of the many startups supported by the Oracle for Startups program.

B-Yond is an exciting and innovative business providing a critical solution for communications services providers (CSPs), enabling them to accelerate time-to-market for new 5G and Edge services and intelligently augment CI/CD with Machine Learning (ML) to enhance reliability and fitness for purpose.

The theme for this month is around startups in the 5G communications sector and how they are innovating and changing the competitive landscape.

CX-Create is an independent IT industry analyst and advisory firm, and this report is sponsored by the Oracle for Startups program team.

The business context for B-Yond

Key drivers

The race is on to exploit the vast potential offered by 5G, Edge, and native cloud computing. In 2019, Qualcomm predicted that 5G would be the catalyst for $13.2 trillion of global output by 2035. While this figure may be speculative, the explosion of innovation afforded by the massive boost in bandwidth will undoubtedly change our lives dramatically. Zero-latency robotic automation, continued advances in AI, IoT, VR/AR, holographic conferencing, autonomous vehicles, and 5G devices yet to be imagined will all contribute to what may turn out to be a gross underestimation in global output.

Accelerated innovation and monetization of new 5G and Edge services

In the meantime, pressure is on for CSPs to monetize emerging opportunities as fast as possible, which will have a radical impact on business and go-to-market models and how CSPs compete for customers. To stake their claims in this 21st Century equivalent of the industrial revolution and the great railroad roll-out, they will be under enormous pressure to innovate at an accelerated pace and develop reliable services that customers will trust and buy.

Speed matters and competition will come from adjacent players – the software industry, cloud native vendors, and other non-traditional telco companies, all of which are used to agile development methods. The 5G architecture meant that everything is defined as software, virtualized and increasingly designed for cloud, asynchronous, micro-services, and container-based, among other things.

Major software vendors have also recognized this. Oracle has a 5G portfolio, Microsoft and Amazon have made 5G acquisitions. Cloud has also moved to the edge and added to local racks held in private data centers (e.g., AWS Outpost, Azure Stack, or Oracle Cloud@Customer

Taking a leaf out of the cloud native software development playbook

The cloud concept of software-defined, controlled, and managed networks and virtualization are now part of 5G and Edge. They are creating opportunities for continuous integration and continuous delivery of new functionality, reducing development times that traditionally took 2-4 weeks down to a minute. Manual testing approaches must make way for intelligent and automated methods, but many CSPs are being held back by, at best, semi-automated development approaches that cannot compete.

B-Yond solves the challenge

This is where B-Yond comes in. With a critical solution, AGILITY, to help CSPs innovate faster, exploit emerging opportunities sooner, both alone and with ecosystem partners, to drive profitable growth. Intelligent automation across the entire technology life cycle.

Key observations

- B-Yond's co-founders are serial entrepreneurs steeped in communications, agile software development, AI, and virtualization
- The startup exists to deliver AI-powered automation solutions that enable CSPs to optimize and monetize their networks
- B-Yond is growing at over 50% year-on-year and has tier 1 CSP customers throughout the world
- Expect expansion into adjacent industries
- B-Yond's broad vision and culture motivates it for continuous innovation and growth

B-Yond the story so far......

B-Yond's co-founders are serial entrepreneurs steeped in communications, agile software development, AI, and virtualization

Co-founder Nabil Nadim 'Ned' Taleb (CEO) founded B-Yond in 2017. Rikard Kjellberg was hired as Chief Product Officer (CPO) to develop the product and platform and was promoted to COO in early 2020.

It seems obvious now, but in 2017, advances in the commercial use of AI and automation were in a nascent state. With a long track record in the communications industry, Taleb made a massive bet on the evolution of AI networks and automation software, confident that it could accelerate the development of 5G services.

Taleb and Kjellberg felt well equipped to fill the solution gap.

Taleb had previously co-founded several communications industry companies, one of which, Nexius provided a book of existing business carved out as the foundation of B-Yond. B-Yond became the ninth member of a family of companies. Its specialist remit is a focus on the challenges of communications digital transformation and specifically 5G and edge services and applications development.

AGILITY - Solution overview

The startup exists to deliver AI-powered automation solutions that enable CSPs to optimize and monetize their networks.

The focus is on value realization rather than operational cost reduction, as the biggest challenge is accelerating the delivery of services. This includes those developed with

ecosystem partners to drive value for end customers and generate profitable revenue streams for the business.

AGILITY automates the entire technology lifecycle, providing continuous testing and delivery, then continuous validation and assurance in the production network.

AGILITY provides a five-stage automated process flow across the test lifecycle

The AI-enabled end-to-end test cycle consists of five stages:

1. Integration and data collection – Agility retrieves data from the customer's data sets through an automated process or, if required, manual input via the UI.
2. Data extraction and transformation – B-Yond's subject matter experts (SME) identify specific attributes to be used by the ML model to classify patterns and predict the root cause of failure if it occurs.
3. The RPA-based assisted labeling supports the SME to assign labels for model training data.
4. AGILITY's pattern recognition and classification models assign a prediction for each new test and identifies root cause based on specific signatures identified by the data transformation process.
5. Validation/reinforcement – the SME validates and reinforces the prediction of the model. This continuous learning process improves the accuracy of the model over time.

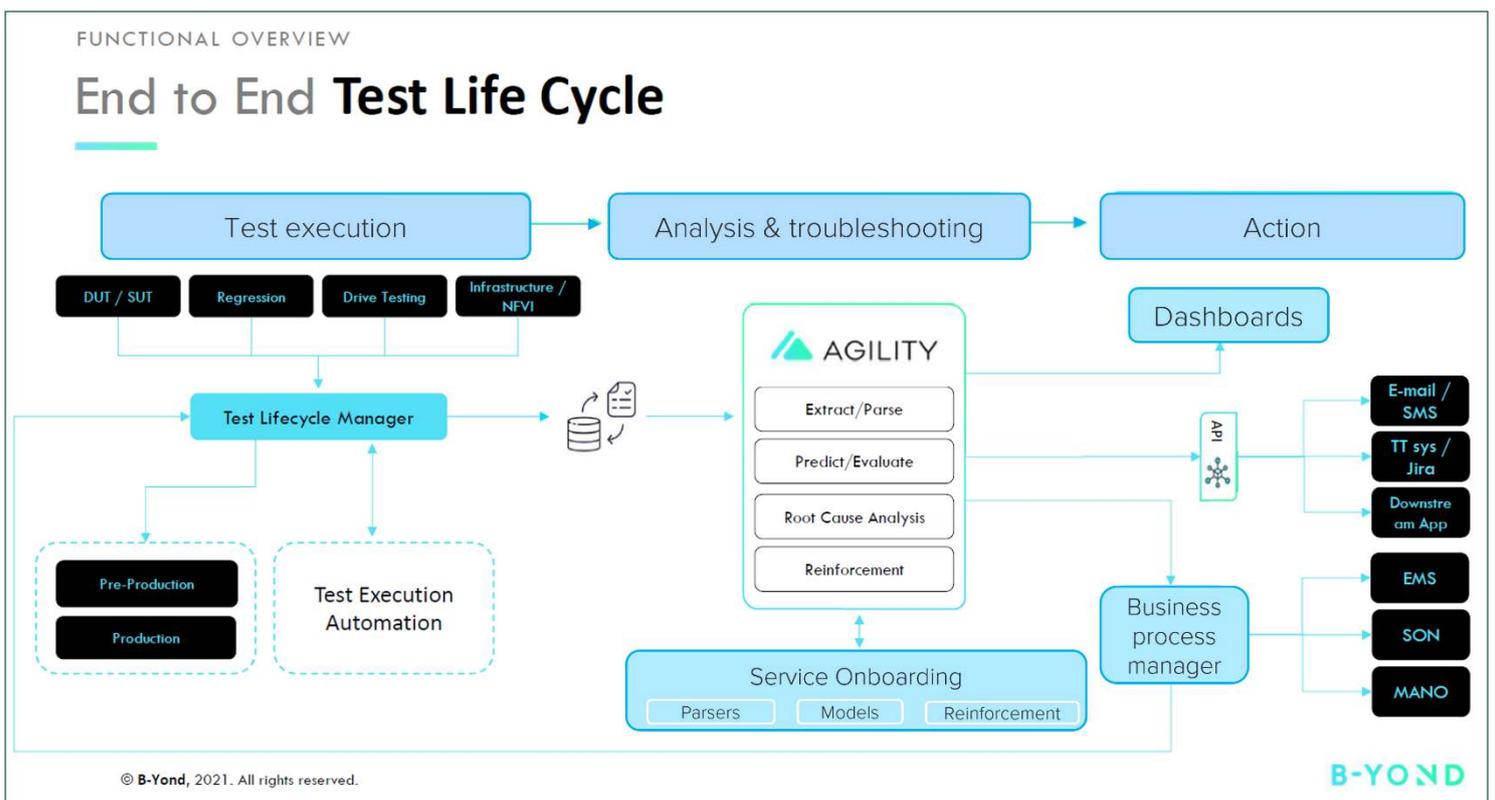Figure 1. provides a technical overview of the platform's functions.

FIGURE 1: AGILITY END-TO-END TEST LIFE CYCLE -SOURCE B-YOND

Current position

Since its foundation, B-Yond has made a enjoyed considerable success.

B-Yond is growing at over 50% year-on-year and has tier 1 CSP customers throughout the world

Headquartered in San Jose, CA USA, B-Yond is growing at over 50% year-on-year and has gained a healthy roster of major customers worldwide, including three leading CSPs in the USA. It is being used to provide testing and root cause analysis in the critical areas of emergency services and public safety. It has been used to test:

- Oracle 5G Core policy control function (PCF) and simulate call flow variations resulting in tuned ML models, in advance of actual testing generating 1300 test templates.
- Emergency 911 testing automation – covering SIP and location call flows, multiple systems tests, and accelerated RCA validation and data analysis with automated extractions.
- Mission-critical push-to-talk (MCPTT) quadrupling testing capacity with over 90% accuracy. MCPTT is vital during times of significant calamities, providing communications support for emergency services in the face of hurricanes, forest fires, earthquakes, or terrorist outrages.
- Voice over LTE (VoLTE) – drastically reducing service updates and upgrades.

A selection of customers includes AT&T, T-Mobile and Verizon.

The company has over two hundred employees, of which sixty are dedicated to product development.

Current go-to-market model

B-Yond has partnerships with consulting firms, systems integrators such as Accenture, Atos, and E&Y, technology providers like Keysight, with Oracle Cloud Infrastructure providing the development environment. More are being encouraged to partner with B-Yond all the time, and it also has links with academia and industry groups.

Current investors

B-Yond and its sibling companies are fiercely independent and entirely self-funded. Independence gives the group the flexibility to adapt and move into adjacent opportunity areas.

Future direction

Expect expansion into adjacent industries

B-Yond will extend its reach into adjacent industries exhibiting similar characteristics and facing the same challenges of new services development, speed to market, and monetization. Media and digital content providers are likely to be the first target.

Longer-term, Taleb sees the global digital world morphing into an 'infinite network' of interconnected ecosystems, underpinned by 5G, edge, cloud native infrastructure, and of course, AI and automation. He states, 'Our mission is to help transform industries and

businesses, using our group leadership, knowledge, and experience to both guide and challenge.' We can expect more innovation

Oracle Cloud Infrastructure and the Oracle for Startups program prove their value to B-Yond

B-Yond relies on Oracle Cloud Infrastructure, including Oracle Bare Metal Servers, for the massive workloads it needs. It has used OCI for developments, proof of concepts and pilots. The first production deployment is now in progress in Europe.

Kjellberg was introduced to Oracle by a friend and was attracted by Oracle's global reach with data centers in every region and the performance of its second-generation cloud infrastructure. The Oracle for Startups program also played its part – 'The support for startups was really attractive, including the discounted rates among other things.'. He also noted the responsiveness of Oracle people. 'Whenever we had an issue, Oracle was straight on to it. Early on, we had a load balancing issue, and they were on it immediately.' When I asked if he would recommend the Oracle for Startups Program to others, he said, 'Absolutely, it's been great and the right thing for us.'

CX-Create's viewpoint

B-Yond's broad vision and culture motivates it for continuous innovation and growth

B-Yond is growing rapidly and is assisted by a common culture across the nine companies that believes in continuous innovation and challenging the accepted norms. This is undoubtedly a reflection of the founder's ethos and provides an attractive environment for graduates and experienced developers alike. There will likely be considerable cross-fertilization across the Infiniux group of companies to pursue the next stage of 5G, edge AI, and automation and the eventual realization of the infinite network.

While the telecommunications industry is at the heart of these developments, it is by no means alone. It would be wrong to pigeonhole B-Yond as a telco-centric software company; its vision is far more expansive. We expect it to succeed with media and digital content provider markets and probably well beyond them.

Summary details
Table 1: Fact sheet

Solution name	AGILITY	**Solution category**	AI-powered network intelligence and automation solutions
Key industries	Communications services providers, media and digital content providers	**Geographies**	Global
Deployment model	SaaS, (on premise of cloud)	**Licensing basis**	Subscription + services
Size of organizations served	Large enterprises	**Go-to-market model**	Indirect via consulting and systems integrators and VARs
Number of employees	200+	**Key partnerships**	Accenture, Atos, E&Y, Keysight
URL	https://www.b-yond.com/	**HQ**	San Jose, CA, USA

Appendix

About CX-Create

Jeremy Cox founded CX-Create Limited in January 2021, a former principal analyst at Omdia (formerly Ovum) focused on customer engagement strategies and platforms.

He is recognized by major CX vendors, clients, and former colleagues as a leading thinker in customer experience and engagement. Formative experiences in the 1990s at IBM convinced him of the critical importance of understanding the business world from the outside-in. These insights were put to practical use in his former roles as a principal CRM consultant at KPMG Consulting and as an independent consultant supporting public and private sector organizations.

Our mission

CX-Create's mission is to help enterprises and the vendors that serve them remain relevant. The company's primary focus is to track and understand the constantly evolving customer experience world and share those insights with clients. Continuous innovation is also an essential component of persistent customer relevance, directly and indirectly, which is why we are enthusiastic about startups and the Oracle for Startups Program.

Further reading

- [Four communications industry trailblazers accelerate the monetization of 5G and Edge](#)

- [Oracle gives startups a big lift and a boost for continuous innovation](#)

- [Modernizing the Telco Life-Cycle with Automation](#)

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