



DIGITALNXT CASE

## digitalNXT Search optimises BAM's bid management

BAM Infra Nederland, a subsidiary of Royal BAM Group, is specialised in the design, construction and maintenance of roads, bridges, tunnels and other infrastructure assets. The bids that BAM submits in response to requests for tender often consist of hundreds or even tens of thousands of documents, all of which must be read and qualified in order to come out with a good offer. BAM is experimenting with digitalNXT Search to make these documents easily findable and searchable.

*'More efficient tender process thanks to cognitive search'*

### More efficient bid process

Large, complex tender processes are always affected by time pressure. It is often impossible to read all the documents provided and it is difficult to assess which documents need to be read by whom, all the more so because the bid team constantly requires and has to provide information from different perspectives. You read a customer's wish or demand differently from a design point of view than from a construction perspective. And you tend to make different choices

when maintenance is your priority than when you focus exclusively on the aesthetics. Not to mention the legal and contractual issues involved. Amid all this complexity, how do you create a proposal that has both a high success rate and also covers those risks?

Kitting Lee, Commerce & Innovation Manager at BAM Infra Nederland, worked as a bid manager on tender projects and was thoroughly familiar with these issues from his own experience. "It is almost inevitable that there will be a mistake somewhere along the line because you have to process large



amounts of information within a short time frame. In addition, we regularly find inconsistencies in our clients' documents. Finding those inconsistencies when you're dealing with thousands of documents is nearly impossible. And if you don't spot those irregularities before you sign the contract, this can have dire consequences, both financially but certainly also in terms of the business relationship."

**Data-driven asset management**

This is why BAM Infra Nederland was looking for a way to make the tender process more efficient and effective. Lee: "We have made digital a strategic pillar of BAM Infra Netherlands' strategy. Since 2017, we have been exploring various fields to discover how technology can help us design, build and maintain in a smarter way. Digital in asset management means for us 'data-driven combined with domain knowledge'. For example, we use computer vision to assess asphalt damage, crash barriers and public lighting systems (BAM uses artificial intelligence in digital asset management and predictive maintenance | Royal BAM Group / Royal BAM Group) and we have also gained experience in creating predictive models of pump systems. These two technologies also have a cognitive side, and thus, in working together with OrangeNXT, we came up with the idea to make the many documents in the tender process more searchable by means of cognitive search." digitalNXT Search uses AI technologies such as machine learning (ML), natural language processing (NLP), keyword extraction and sentiment analysis. The software combines information from



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**Kitting Lee,**  
Director Business & Innovation at  
BAM Infra Nederland

different sources, understands the content and interrelationships between documents and can find the right documents when someone types in a search command.

**Self-learning system**

Lee: "What I like about this technology is that documents are unravelled up to the pixel level and translated into understandable text using OCR. This is very powerful, because in our profession we work a lot with drawings that also contain text. Moreover, the tool searches in the same way people do. If





the text states that a solution has to meet a certain standard, then the search engine automatically searches for the document that describes that standard. The software is selflearning, so the search engine's understanding of the context improves all the time and thus it comes back with ever better results. It's essentially a junior employee whom we train to a more senior level."

### Organisational change

Although the organisation is still in the middle of the exploration phase and does not yet use digitalNXT Search company-wide, Lee notes that its implementation is not so much a technology project, but rather involves an organisational and cultural change. "It's people who decide how successful it is," he says. To increase its chances of success, BAM Infra Nederland uses the following approach:

- *Data-driven asset management is part of the organisational strategy. Everyone in the company receives an explanation of why a digital transformation is required and how the organisation will benefit.*
- *"We create ambassadors who act as kind of tour guides. Because this is not a project with a head and a tail, but a journey we take together," Lee says. The ambassadors are motivated, passionate about the opportunities offered by the technology, and they inspire and motivate their colleagues.*
- *New digital tools are developed in the business and not in a project group that is separate from the business. The people who will be using*

*these tools are part of the development, which results in a high adoption rate of new technology.*

### Better bids in response to requests for tender

While the implementation of digitalNXT Search is still in full swing, several business units are already knocking on Lee's door. "Of course you can apply cognitive search in many other areas. Take project management, for instance, or purchasing, or looking up references. We have a long list of applications on our backlog." Nevertheless, he first wants to show that the goals are met in the tender management process:

### Better bids in response to requests for tender thanks to:

- *The information provided is used more effectively;*
- *The bid team experiences less time pressure;*
- *Risks can be identified more precisely;*
- *We learn from the past in terms of contracts that were awarded to us or to competitors.*

Lee: "The first experiences have been positive, and we know we can only improve as the system learns more. We've only just started our journey."

### More info?

For more information about digitalNXT Search and its capabilities, please contact us - you will find our contact details below.

### Want to know more about this case?



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