CASE STUDY

BECAUSE A GOOD DENTAL AI NEEDS GREAT MEDICAL ANNOTATION

How Infosys BPM helped a leading healthcare giant secure and accelerate its AI model development for dental surface recognition

Abstract

Kevin Newman, Product Manager at a leading healthcare giant, was facing constant setbacks with his new dental AI model that struggled with inaccurate annotations, high variability, and delayed training cycles. Committed to address the issues within the project's go-live window, he turned to Infosys BPM for support. This case details how Infosys BPM deployed licensed medical domain experts and redefined the annotation workflow to complete 99% of annotation tasks on time, thereby accelerating the project timeline while also driving 40% cost savings and 23% improvement in process efficiency.

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A deep cavity in product development

Kevin Newman is the Product Manager at a leading American healthcare and well-being company delivering care for 147 million people across the globe. In this role, he is primarily responsible to oversee the company's latest AI product strategy and drive successful product launches. Being tasked with driving AI modelling, he manages the company's entire AI product portfolio, ensuring that every model his team builds can effectively support real-world care delivery.

As a part of a new project, the healthcare giant was building and adapting a dental AI model for surface recognition and multiple other workflows. For Kevin, this meant keeping a close eye over the product's performance and overall alignment with clinical expectations, while taking active steps for fine-tuning the model.

To his concern, Kevin began noticing flaws and fluctuations right in the early stages of development. The AI model would consistently struggle to identify surfaces and structures within dental images. It suffered from high ambiguity in clinical contexts and drastic variability across different patient anatomies.

Upon closer evaluation, Kevin noted that the imaging quality of the dental surfaces fluctuated depending on equipment, lighting, and angles. Even common surfaces appeared irregular from one record to the next. And without precise clinical annotations, the model had no reliable ground of truth to learn from. He realised that the model would need licensed clinicians to guide the annotations and maintain proper quality and consistency over the model's training data.

Amidst this, Kevin also felt the internal pressure building. The company had set aggressive timelines for launching the dental solution, and pilot programs were already lined up. But every delay and error in the annotations kept dampening the model's training thereby impacting timelines.

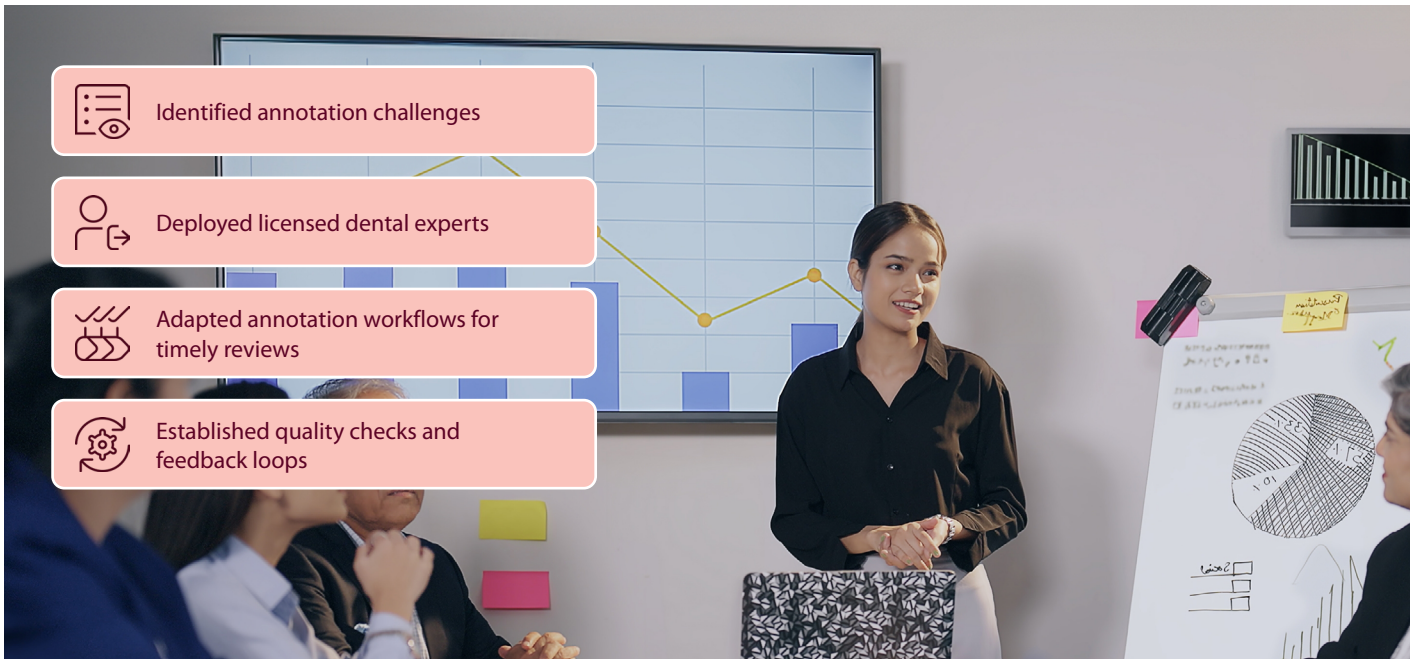
To salvage the situation, Kevin began looking out for an external service provider which could bring in deep clinical expertise and discipline to improve the annotation accuracy and drive AI-driven process optimisation. That's when he decided to revisit an existing partnership that had already proven its value. The company had previously engaged with Infosys BPM, which had supported the organisation in its medical annotation initiatives by bringing in trained medical coders. Confident in their understanding of his clinical workflows, Kevin signed them for an expanded partnership for the new dental AI model. Soon after, Kevin set up a series of meetings with Vaishnavi Bharadwaj, the Infosys BPM Project Lead, where he walked her through the new project, outlined the annotation challenges, and underscored his need for specialist support and guidance.

Undergoing specialist treatment

With the new brief in hand, Vaishnavi immediately rounded up her team to kickstart the project. Consequently, the team sat together to break down Kevin's requirements and challenges, noting where the model was failing and what ambiguities were compounding the problem.

After building a clear understanding of the challenges, Vaishnavi pulled in licensed dentists and domain specialists who could provide the level of clinical precision Kevin's model needed for accurate annotation.

Approach summary



In parallel, Vaishnavi's team worked in close sync with Kevin to restructure the existing workflows to make reviews faster and establish a dependable quality-control loop. They adapted the processes so that every annotation batch moved through iterative checks and feedback cycles, creating a rhythm that could directly stabilise model inputs.

As accuracy strengthened, Vaishnavi led her teams to scale the operation, ensuring that their throughput remained aligned with the project's timelines. However, at times, her experts moved faster than Kevin's teams could supply data, creating operational gaps and delays they couldn't directly control.

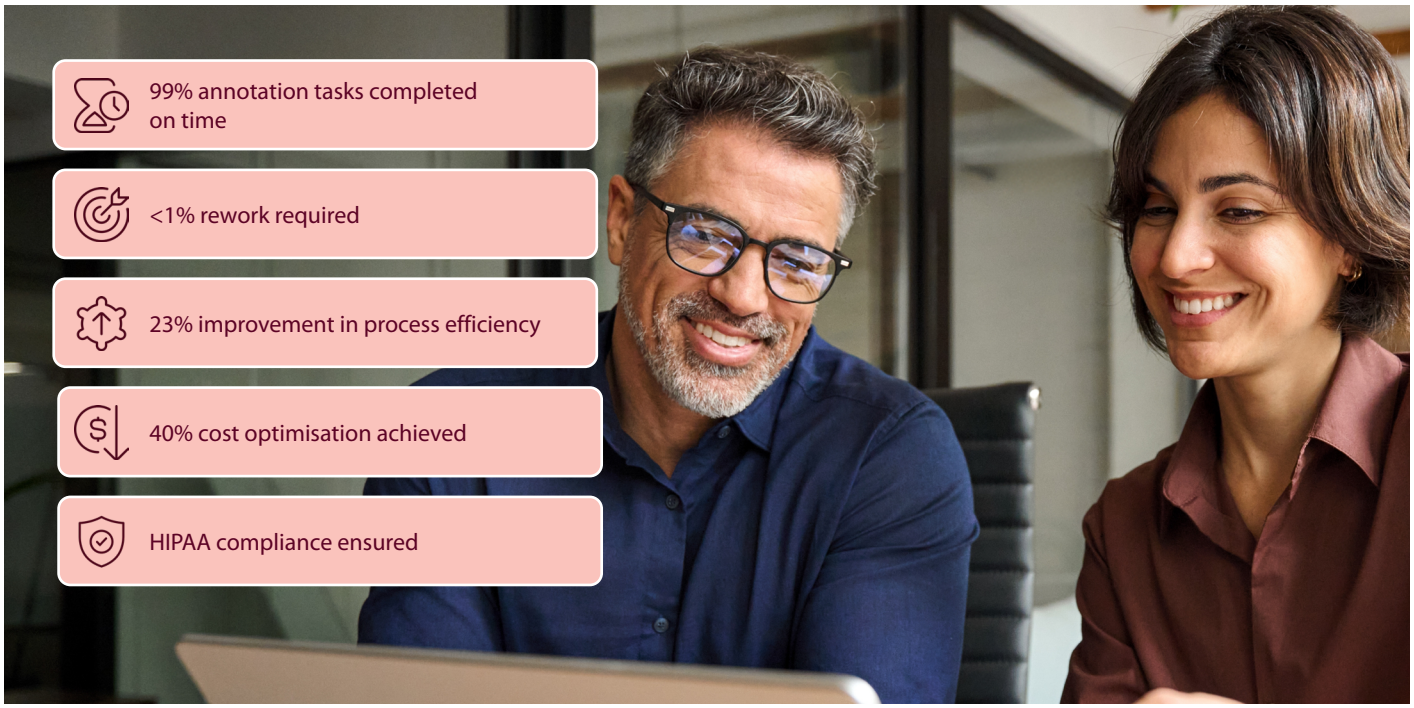
But with consistent coordination and steady communication, Vaishnavi and team successfully worked through the bottlenecks and scaled the project forward within the planned timelines.

All smiles with a successful end-product

By the time the model reached its final validation cycle, Kevin's biggest worry had flipped into his biggest win. What began as a project held back by scattered workflows and annotation delays became one of the fastest-moving AI initiatives in his portfolio. And the impact was visible everywhere.

Infosys BPM's clinical annotation team delivered 99% of tasks on time, with less than 1% rework, creating a clean, high-quality dataset that accelerated every downstream stage of AI development. For Kevin, this meant the dental surface-recognition model could be trained weeks ahead of schedule, helping him meet the aggressive go-live timelines.

Key benefits



The project also brought about a huge 23% improvement in process efficiency and 40% cost savings, enabling Kevin to push the dental AI solution into pilot environments much earlier than planned. This early deployment not only strengthened competitive positioning but also allowed the company to realise revenue a lot faster. Along with this, the team drastically improved the annotation accuracy, thereby reducing error rates and boosting clinician trust in the AI model across workflows.

Behind the scenes, the operational model itself became a strategic win. Vaishnavi's scalable, flexible talent pool allowed Kevin to adjust annotation capacity without jeopardising delivery timelines, while the built-in compliance practices ensured HIPAA-aligned, audit-ready operations from day one.

For Kevin, this project ended up becoming a defining moment. He earned several internal accolades and recognition from the leadership for launching the project successfully, turning a high-risk, time-sensitive initiative into one of the most seamless AI rollouts of the year.

**Names have been altered to preserve the identities of the people involved.*

For more information, contact infosysbpm@infosys.com

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