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**Kaeryx: A Business Plan for Continuous Muscle-Load and Asymmetry Monitoring in Competitive Sports**
Audria Meuthia Basyadi, Prof. Amin Wibowo, S.E., M.B.A., Ph.D.
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# ABSTRACT

Sports injuries remain a persistent challenge for competitive sports organizations, while existing athlete-monitoring technologies primarily focus on external training load, physiological recovery, or periodic assessment of muscle asymmetry in clinical settings. This creates a structural blind spot in which physiological changes that occur during training cannot be continuously monitored to support real-time decision-making.

This study aims to develop the business plan for Kaeryx, a wearable technology designed for continuous muscle-load and muscle-asymmetry monitoring, identify the most viable commercialization strategy, and evaluate the financial feasibility of the proposed business model. The study adopts a mixed-method approach through a three-stage Customer Discovery process supported by in-depth interviews, surveys, literature review, Business Model Canvas, Value Proposition Design, and financial feasibility analysis.

The findings indicate that demand for the proposed solution is substantially stronger among sports organizations than individual athletes, leading to a strategic pivot from a business-to-consumer (B2C) to a business-to-business (B2B) commercialization model. Based on this validation process, the study develops an evidence-based business model targeting professional sports organizations through a combination of hardware sales, software subscriptions, and onboarding services. Financial feasibility analysis across the Bear, Base, and Bull scenarios indicates that the proposed business model demonstrates commercially viable development potential at the pre-seed stage. Overall, this study provides a systematic framework for translating an early-stage sports technology innovation into a validated and financially feasible venture through Customer Discovery and market validation.

**Keywords**: *business plan*, *Customer Discovery*, *commercialization strategy*, *athlete monitoring*, *sports technology*

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# ABSTRAK

Cedera olahraga masih menjadi tantangan utama bagi organisasi olahraga kompetitif, sementara teknologi *monitoring* atlet yang tersedia saat ini umumnya befokus pada *external training load*, pemulihan fisiologi, atau pengukuran keseimbangan otot secara periodik dalam lingkungan klinis. Kondisi tersebut menciptakan *blind spot* struktural karena perubahan kondisi fisiologis atlet selama sesi latihan belum dapat dipantau secara berkelanjutan untuk mendukung pengambilan keputusan secara *real-time*. Penelitian ini bertujuan untuk menyusun *business plan* Kaeryx sebagai solusi *wearable technology* untuk memantau *muscle-load* dan keseimbangan otot secara terus-menerus, menentukan strategi komersialisasi yang paling layak, serta mengevaluasi kelayakan model bisnis yang diusulkan.

Penelitian ini menggunakan pendekatan *mixed-method* melalui tiga tahap *Customer Discovery* yang didukung wawancara mendalam, survey, studi literatur, *Business Model Canvas*, *Value Proposition Design*, dan analisis kelayakan finansial. Hasil penelitian menunjukkan bahwa kebutuhan pasar terhadap solusi yang diusulkan lebih kuat berasal dari organisasi olahraga dibandingkan atlet individu sehingga strategi komersialisasi beralih dari *business-to-consumer* (B2C) menjadi *business-to-business* (B2B).

Berdasarkan proses validasi tersebut, penelitian ini menghasilkan model bisnis berbasis bukti yang menargetkan organisasi olahraga professional melalui kombinasi penjualan *hardware*, *software subscription*, dan *onboarding service*. Analisis kelayakan finansial pada scenario *Bear*, *Base*, dan *Bull* menunjukkan bahwamodel bisnis yang diusulkan memiliki prospek pengembangan yang layak pada tahap *pre-seed*. Penelitian ini memberikan kerangka sistematis bagi pengembangan dan komersialisasi inovasi *sports technology* melalui penerapan *Customer Discovery* dan validasi pasar.

**Kata kunci**: *rencana bisnis*, *Customer Discovery*, *strategi komersialisasi*, *monitor atlet*, *sports technology*