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A Problem-Driven Open Innovation Framework for Accelerating New Value Creation through Internal Assets and External Technologies

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Abstract

As electric utilities pursue decarbonization, digitalization, and greater system resilience, they face increasingly diverse challenges that cannot be solved through internal resources alone. Conventional in-house development or specification-driven procurement tends to optimize known solutions, but often limits the breadth of hypotheses considered in the early stage of innovation. To address this issue, Kansai Electric Power launched its first public open innovation program in the civil engineering and building domain, designed around the concept of combining internal assets (e.g., power plant equipment and facilities, civil structures, industrial by-products, maintenance and asset management expertise, energy management know-how, and other related resources) with external technologies to create new business opportunities and solve social challenges.

The program adopted a challenge-driven, solution-agnostic approach. First, available internal assets, potential use cases, evaluation criteria and a stage-gate process with defined decision points were established. Next, an open call was issued under a social-problem-oriented concept, explicitly presenting areas such as infrastructure value enhancement, labor shortage mitigation, and regional revitalization. Proposals were screened through document review, interviews, and an intensive one-day workshop. In total, 54 proposals were received and four were shortlisted for deeper co-creation. The workshop format enabled both sides to refine customer needs, value propositions, KPIs, and potential PoC (proof-of-concept) structures within a short time.

The program produced two main outcomes. First, clarifying utility assets and challenge areas improved both the diversity and relevance of external proposals. Second, the process generated a repeatable operating model for utility open innovation, including theme design, stage-gate evaluation, and cross-functional coordination. It also helped internal teams rediscover the value of their existing assets and apply more consistent business-model thinking. This presentation shares the design principles, operational lessons, and early results of the program, and argues that a structured open innovation framework can help utilities accelerate collaboration with external technologies, reduce trial-and-error in the early stage, and build a scalable pathway from idea discovery to PoC and future commercialization.