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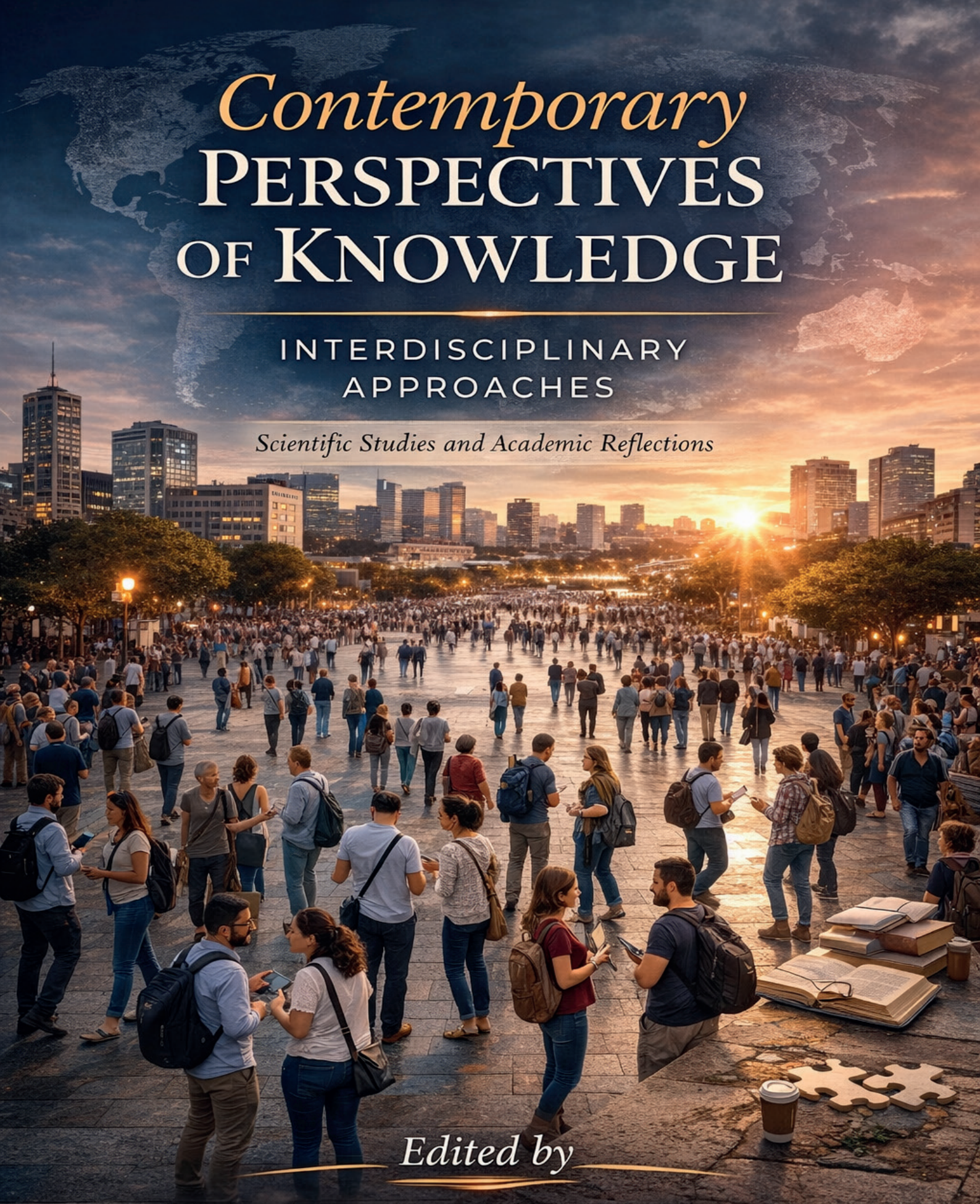

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Chapter 3

TECHNICAL ASSESSMENT OF EXPERTISE IN OPERATIONS MANAGEMENT, TECHNICAL INNOVATION, AND STRATEGIC LEADERSHIP

TECHNICAL ASSESSMENT OF EXPERTISE IN OPERATIONS MANAGEMENT, TECHNICAL INNOVATION, AND STRATEGIC LEADERSHIP

Kauê Chiaravalloti Gomes[1]

Abstract: This technical report assesses the expertise of Mr. Kauê Chiaravalloti Gomes, a professional of extraordinary ability in operations management, technical innovation, and strategic leadership. The methodology involved the analysis of documentary evidence, focusing on the technical manual he authored on the application of the ABNT NBR 16612 standard (GOMES, 2022). The report details his leadership in creating the first photovoltaic (TOX) cable with 100% national polymer, breaking the dependence on imported materials. The results demonstrate a profound sector-wide impact: a 23% cost reduction, a 40% decrease in lead time, and revenue of R$3 million over three years, with validated application in 108 MWp of solar plants (ABILITY/INMETRO, 2020). The innovation set a new market standard, adopted by multiple manufacturers. The assessment confirms an expertise that integrates engineering, management, and strategy, resulting in industrial transformation with measurable and lasting impact.

Keywords: Operations management. Technical innovation. Strategic leadership. Industrial scalability. ABNT NBR 16612 standard. Photovoltaic cable.

1 goal-oriented leader with extensive expertise in operations management, strategic planning, and product development. With a proven track record of scaling manufacturing capacity and executing comprehensive business plans from the ground up, he excels at driving sustainable growth and optimizing efficiency. Kauê has successfully managed large teams, spearheaded high-impact projects—such as a revenue-generating photovoltaic initiative—and secured significant national sales contracts. Bilingual in Portuguese and English, and backed by ongoing studies in Business Management and a postgraduate background in People Management, he combines technical acumen with strong commercial awareness to cultivate long-term partnerships and deliver consistent profitability.

Introduction

This technical report consolidates and assesses the expertise of Kauê Chiaravalloti Gomes, focusing on his pioneering contribution to the solar photovoltaic energy sector in Brazil (ENGIE, [s.d.]). The analysis delves into his technical leadership in the development and application of the ABNT NBR 16612 standard, which culminated in the creation of an innovative product and the re-definition of market practices, connecting this achievement to his broader competence in operations management and strategic leadership. The document uses the project's technical manual, authored by the assessed professional himself, as a primary source to demonstrate the depth and impact of his work (GOMES, 2022).

Technical Description of the Subject

The central subject of this assessment is the technical contribution of Kauê Chiaravalloti Gomes, materialized in the development project of the national non-halogenated thermoset photovoltaic cable (TOX). The project started from a market situation where there was a consolidated dependence on imported polymers (Borealis brand), based on a restrictive and unwritten interpretation of the ABNT NBR 16612 standard (GOMES, 2022). Kauê challenged this practice, formulating an alternative, technically grounded interpretation that the standard defines performance requirements (thermal resistance of 120°C, UV resistance, etc.) — not the origin of the material.

As integral technical leader, his work covered all project phases, from theoretical conception through to industrial-scale application. In product engineering, he defined and validated the technical parameters to make the national polymer compatible with the standard's requirements, without altering the final product's functionality. In development and testing, he coordinated the manufacturing of a 500-meter pilot batch (6.0 mm² cable, red — technically the most critical color), which was submitted to tests at an accredited laboratory (ITEN), achieving full approval. In official certification,

he obtained the ABILITY/INMETRO certificate No. ABY-OCP-2020/0092 on November 25, 2020, attesting to the product's full compliance with NBR 16612.

Procedures and Methodology

The assessment methodology consisted of the critical and detailed analysis of the "Manual for Technical Interpretation and Application of ABNT NBR 16612", authored by Kauê Gomes (GOMES, 2022). This document served as the primary evidence, detailing the project step by step.

The procedures followed the chronology described in the manual:

(i) Systematic analysis of the standard — in-depth study of the NBR 16612 requirements to substantiate the new interpretation;

(ii) Supplier research and validation — identification and evaluation of national suppliers of thermoset compounds, including comparative analysis of technical documentation and test reports;

(iii) Pilot production and homologation — manufacturing of a test batch (100 kg sample) with minimal adjustment to the production process (extruder zone 5), followed by testing and formal homologation (ABILITY/INMETRO, 2020);

(iv) Results analysis — extraction and verification of technical and commercial impact data documented in the manual, including cost spreadsheets, sales tables, and partner releases (GOMES, 2022).

Results

The implementation of the project generated quantifiable, high-impact results, extracted directly from the technical manual (GOMES, 2022).

Table 1: Comparative Cost and Margin Analysis (Average Unit Values)

Indicator	Previous Scenario (Imported)	New Scenario (National)	Variation
Sale Price (R$)	5.20	4.16	-20%
Unit Cost (R$)	4.16	3.20	-23%
Unit Margin (R$)	1.04	0.96	-7.7%
Margin Percentage (%)	20%	23%	+3 p.p.

Structural and Commercial Impacts

The reduction in lead time was approximately 40%, increasing logistics predictability. The commercial impact (sales from 2020 to 2022) generated total revenue of R$ 3,015,497.77 over three years (GOMES, 2022). The scale of application was validated across 7 solar plants (in the states of Goiás, Distrito Federal, and Minas Gerais), totaling 108 MWp of installed capacity, with supply to ENGIE projects (ENGIE, [s.d.]). The market trend creation was significant: the innovation was adopted by other major manufacturers (REICON, SIL, Ibrac), transforming sector practice and establishing a new technical and commercial standard in Brazil.

Analysis and Discussion

The analysis of the results demonstrates that Kauê Chiaravalloti Gomes' contribution transcends that of a project manager — he acted as an agent of sectoral transformation. The decision to challenge a consolidated market practice, grounded in a rigorous technical reinterpretation of the standard, evidences an expertise that combines engineering depth with strategic vision (GOMES, 2022).

The financial results are a direct consequence of this innovation: the 23% cost reduction not only increased the percentage margin by 3 percentage points, but also enabled a 20% more competi-

tive price repositioning, making a volume gain feasible that, according to the manual, would require only an 8.14% increase in revenue to match previous profits.

The most significant impact, however, is the creation of technological independence for Brazil in this niche and the establishment of a new market reference — an achievement that demonstrates lasting influence of paramount relevance to the professional field (ABILITY/INMETRO, 2020).

Conclusions and Recommendations

Based on the exhaustive analysis of the evidence contained in the technical manual (GOMES, 2022), it is concluded that Kauê Chiaravalloti Gomes possesses an extraordinary ability, demonstrated by his capacity to lead a high-impact technical innovation from conception through to market transformation. His contribution is original, of substantial importance, and has generated lasting effects across an entire industrial sector.

The combination of technical rigor, strategic vision, and flawless execution — documented in detail in the manual — proves his expertise. It is recommended that this case be studied as a model of innovation, technical management, and market transformation in Brazilian industry.

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