Developing a competence audit for technological innovation

By

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Summary

Title: Developing a Competence Audit for Technological Innovation
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Technology and the implementation thereof, has helped to develop the human race far beyond its fragile origins. It is technology that enables us to gather and produce our resource requirements such as food, water and other raw materials. It is technology that transforms our society and the way we interact, technology that influences our politics, economics and even in some cases our religion as well.

This thesis focuses on improving an organisation's capabilities to implement technology, particularly with regard to maximising the organisation's success at innovation and specifically technological innovation. It aims to develop a methodology for the auditing of competencies, in innovative organisations. Subsequently organisational strengths and weaknesses are identified vis-à-vis best innovation practises.

The thesis defines the terms 'innovation' and 'technological innovation', and then proceeds towards developing a methodology for improving technological innovation. This requires the development of a standard or benchmark, which will be able to guide organisations in deciding which of its own competencies are strong or weak. Equipped with such a standard in the form of an innovation model, the process of improving the innovation competencies in organisations may begin. This is accomplished by implementing an audit methodology in the form of an innovation audit questionnaire. The questionnaire audits the competencies in the organisation by comparing them with previously defined best innovation standards. This comparison yields a list of 'strengths' and 'weaknesses' that may then be pursued further by the organisation. The goal of this auditing process is therefore to identify and highlight strengths and weaknesses in the innovation competencies of innovative organisations.

The final section of the thesis contains data gathered through the implementation of the developed competence audit for technological innovation. Five organisations were audited. The results correlate well with the expected competencies of their industries. However, the results should not be interpreted in a quantitative manner, for the aim of the proposed audit is not to dictate absolute solutions, but rather to identify strengths and weaknesses in organisations' innovation processes.

Key Words: technological innovation auditing, competence based innovation auditing, innovation assessment, identifying innovation strengths and weaknesses, innovation management practises.

Opsommin

Titel: Die Ontwikkeling van 'n Vaardigheidsoudit vir Tegnologiese Innovasie
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Tegnologie en die implementering daarvan het die mens vêr bo sy aardse agtergrond laat uitstyg. Dit is tegnologie wat ons in staat stel om primêre produkte te produseer, te verwerk en effektief te benut. Tegnologie verander die sosiale struktuur, die interaksie tussen mense, die politiek, ekonomie en soms selfs die mens se geloof.

Hierdie verhandeling beskou 'n organisasie se vermoë om tegnologie tot sy voordeel te implementeer, met ander woorde, om die organisasie se sukses met innovasie en meer spesifiek tegnologiese innovasie te verbeter. Dit poog om 'n metodologie vir die oudit van innoverende organisasies daar te stel, deur hoë impak vaardighede, eie aan die organisasie, uit te lig en met bewese goeie innovasie praktyke te vergelyk.

Die verhandeling begin met die definieëring van innovasie en tegnologiese innovasie om 'n basis vir die ontwikkeling van 'n innovasie oudit te skep. Om sterk en swak punte in innovasie te definieer, vereis 'n standaardmodel, waarin bewese innovasie praktyke vervat mag word. Toegerus met so 'n model, kan werklike verbetering van 'n organisasie se innoveringsvermoëns begin, deur sterk en swak punte uit te lig, waarop dan voortgebou kan word. Dit word vermag deur die implementering van 'n oudit metodologie vraelys. Die vraelys oudit die vaardighede, deur dit te vergelyk met bewese goeie innovasie standaarde of praktyke. 'n Lys van sterk en swak punte van 'n organisasie, waarop dan gebou kan word, word so uitgelig.

Die laaste deel van die verhandeling fokus op resultate, na aanleiding van verskeie ouditttoetse wat by vyf organisasies uitgevoer was. Die resultate is verkry deur die implementering van 'n ouditvraelys. Die meeste van die resultate het goed met die verwagtinge van die tipiese industrieë ooreengestem. Alhoewel mens geneig is om die resultate op 'n kwantitatiewe manier te beoordeel, is dit nie die doel van die verhandeling om dit so te interpreteer nie. Dit moet eerder op 'n kwalitatiewe wyse gebruik word, waar dit die sterk en swak punte van 'n organisasie se innovering beklemtoon.

Sleutelterme: tegnologiese innovasieoudit, vaardigheids gebaseerde innovasieoudit, innovasie assessering, identifikasie van sterk en swak innovasiepunte, innovasie bestuurspraktyke.

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Business has only two basic functions:
Marketing and innovation.
Marketing and innovation produce results.
All the rest are costs.

— Peter F Drucker (1985)[1]

[1] Drucker P.F., [1985] *Innovation and Entrepreneurship,* Harper & Row, New York.