

2.8.1 Executive Summary

Purpose

The purpose of this case study is to minimize human errors in calculating audit man-days (audit time) at Ind-Expo Certification Limited. Inaccurate man-day values negatively affect the number of auditors assigned and the calculation of audit fees.

Scope

Audit man-days directly determine the size of the audit team and certification fees. Accuracy is critical, but the current manual process requires referring to IAF MD 5:2019 and ISO/TS 22003:2022 (E), which is complex and error-prone.

Findings

- Manual calculation is time-consuming and prone to human error.
- Paper is wasted due to repeated corrections.
- Errors in audit time result in wrong auditor allocation and inaccurate fees.
- Clients often expect immediate fee quotations, which cannot always be provided with the current manual system.

Conclusion & Recommendation

The Man-day Calculator app provides a reliable, fast, and user-friendly solution to calculate audit man-days. It minimizes human error, reduces paper usage, and ensures accurate audit fees. The app allows staff to access results anytime, anywhere, enabling quicker client responses and better operational efficiency.

2.8.3 Problem

Ind-Expo Certification Limited handles a busy schedule of certification activities. Manual calculation of audit man-days takes time and is prone to mistakes. Errors in audit time directly affect:

Number of auditors in the team.

Accuracy of audit fee calculation.

Since audit man-day is the basis for both, mistakes lead to operational and financial disadvantages for the certification body.

2.8.4 Analysis of Problems and Issues

- Complexity of factors: Audit time depends on employee numbers, additional HACCP studies, number of sites, organizational category, and applicable management systems.
- High workload: Reviewing multiple client applications and referring to IAF MD 5:2019 and ISO/TS 22003:2022 tables is tedious.
- Error impact: Wrong man-day values → wrong audit team size → wrong audit fee → client dissatisfaction and financial losses.
- Staff capability: Experienced staff can manage better, but interns/new employees often struggle with formulas.
- Paper wastage: Repeated corrections add to inefficiency.
- Client expectation: Many companies demand immediate fee quotations, but calculations get delayed if staff are busy with audits/training.

2.8.5 Evaluation of Alternative Solutions

1. Manual double-checking

Each calculation reviewed twice to reduce errors.

Trainee calculations verified by senior staff.

Pros: No extra cost.

Cons: Still time-consuming, human errors may persist.

2. Man-day Calculator App

Automates calculations using embedded standards (IAF MD 5:2019 & ISO/TS 22003:2022).

Pros: Quick, accurate, user-friendly, accessible anytime/anywhere.

Cons: Requires initial development effort and database maintenance.

Recommendation:

The Man-day Calculator App is the most efficient solution. It minimizes human error, saves time, reduces paper usage, and ensures clients receive immediate and accurate fee quotations.