



Comparative Study



Proven benefits from legacy code conversion

The practical implications of legacy code conversion

Large IT organizations often deal with legacy applications. Maintaining these can be challenging. Specifically, resource availability, keeping up with the pace of change and the need for improved functionality and flexibility at lower costs.

Avanade Automated Migration Technology (AMT) conversion engine aims to tackle this problem by converting mainframe legacy source code to modern platforms and technologies (Java or C#). This creates new possibilities for modernization.

CAST and Avanade agreed to objectively study and compare overall application quality metrics for a representative, end to end mainframe migration. The study compares quality and risks of a Policy Admin System before and after the conversion of 2 million lines of code from an IBM Mainframe environment to a Microsoft .NET cloud environment.

The results show a massive quality improvement in the converted code, at the expense of an acceptable and maintainable increase in lines of code amongst a variety of additional benefits.



What does this mean for organizations?

The result of the study show that legacy code conversion is a valid alternative that should be taken seriously by those wanting to move away from mainframe setups.

Additionally, several other benefits were identified:

Increased strategic insights

The process of code conversion can provide immediate visibility on cloud compatibility and potential issues. Additional tools can also help to visualize valuable hidden information.

Organizations can also track progress on initiated actions, identify the (cost) drivers of migrating away from mainframes and into the cloud, as well as get recommendations about which cloud solutions are a good fit for the converted code.

Increased transparency

Organizations can reduce risks and create transparency, thereby being one step further towards modernization and moving to cloud, as well as create a complete inventory, or bill of materials, of all the components used anywhere in the application.

Improved software quality and lower maintenance effort

The conversion uses international standards to motivate solid coding practices resulting in a big quality increase (Total Quality Index from 2.73 to 3.56). This score is an aggregate of a variety of characteristics such as robustness, efficiency, security, transferability, and changeability. The output is likely to result in a significantly reduced maintenance effort. Additionally, code duplication and dead code can be identified, allowing for further quality improvement if desired. The study further shows that the converted code proves itself as highly compatible with cloud hosting options, thereby reducing the costs and complexity of moving applications to the cloud.

A noteworthy finding was also that the total number of lines of code in the applications increased by 61%. We believe this to not be a major concern as memory and storage are increasingly reducing in cost. Additionally, the code in the study was converted into .NET technology, thereby enabling the team to take full advantage of the .NET/Azure development platforms for further modernization and a larger pool of developers.

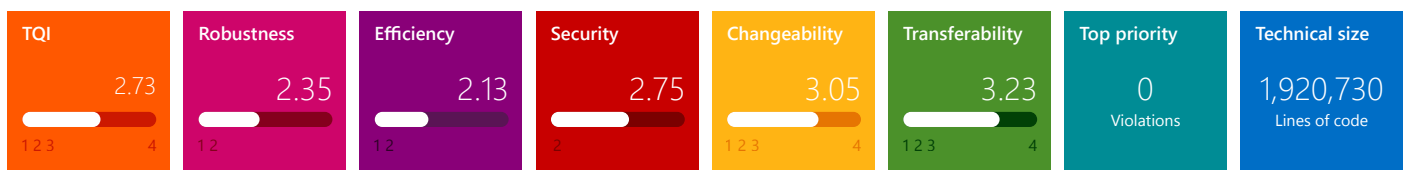
Increased productivity

The .NET platform, contrary to a mainframe, opens the door for using a wide range of open-source components and frameworks which can increase productivity and help drive innovation through quick and effortless reuse. In other words, it can help teams produce more business value with less effort.

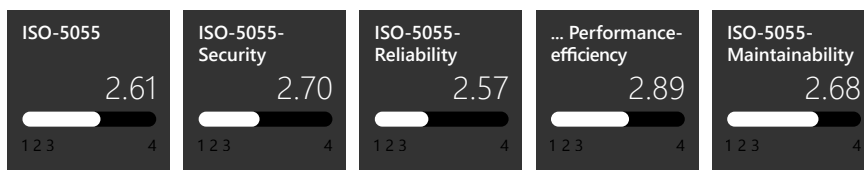
In all key areas of Security, Reliability, Performance Efficiency, Maintainability, Robustness, Security and Changeability, metrics improved significantly, underlining Avanade's AMT conversion technology leadership.

IBM Mainframe environment

CAST AIP Overview

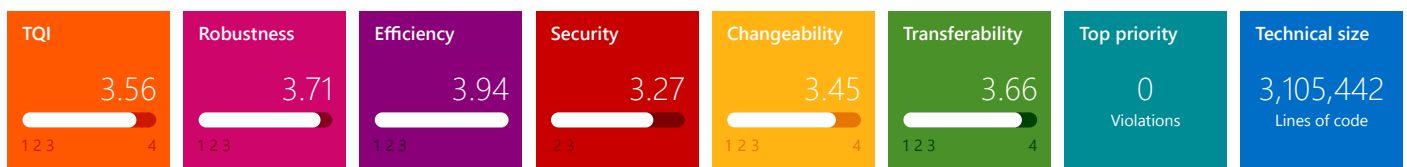


ISO 5055 (ISO/IEC 5055) Overview

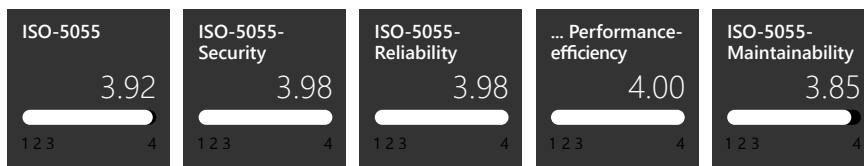


Converted AMT .NET environment:

CAST AIP Overview



ISO 5055 (ISO/IEC 5055) Overview



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About Avanade

Avanade is the leading provider of innovative digital, cloud and advisory services, industry solutions and design-led experiences across the Microsoft ecosystem. Every day, our 58,000 professionals in 26 countries make a genuine human impact for our clients, their employees and their customers. Avanade was founded in 2000 by Accenture LLP and Microsoft Corporation. Learn more at www.avanade.com.

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