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## CASE STUDY

### AUDI AG



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### Automatic Application Data Mining - The Workhorse of Application Portfolio Management

“We have achieved 100 percent of our mainframe base analysis project goals in spite of a tight timeline, at the right quality, with professional delivery and within budget.”

Armin Büttner, Chief Technology Officer, AUDI AG

### PROJECT HIGHLIGHTS

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|---------|-------------------|---------------------|--------------|
| Audi AG | Cars Manufacturer | Ingolstadt, Germany | www.audi.com |
|---------|-------------------|---------------------|--------------|

#### Challenge

Limited transparency of 240 Applications

Highly complex

Difficult and expensive to manage

Limited expansion possibilities

#### Solution

Deployment of HTWC's ICON® product for Application Data Mining

Evaluation of Data in conjunction with on-site consultants and client staff

#### Customer Benefits

In depth analysis of current application landscape

Very transparent insight at from very high, to detailed levels of granularity

Major contribution for developing a very clear strategy for each application

Immediately apparent financial gains

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## THE CLIENT

AUDI AG surely needs no introduction. For over 100 years, AUDI is one of the pillars of the German car industry, epitomizing the “Made in Germany” reputation which was famously exploited in AUDI’s extremely effective “Vorsprung durch Technik” slogan and subsequent publicity campaigns.

A subsidiary of the Volkswagen group, AUDI AG has a very interesting and long history of expansion, growth and integration. With approximately 55000 direct employees, several subsidiaries, 6 international production facilities, as well as hugely impressive supply chains and distribution channels, AUDI AG is one of the largest and most significant global enterprises in operation today.

Over this time of course, the growth has also been supported by the growth in terms of infrastructure, organizational expansion, resources and tools. This entails the growth and expansion of the IT infrastructure and applications.

## GROWING PAINS

The organic expansion and growth of its IT, this has resulted in a somewhat complex myriad of some 240 applications, and countless databases. This in turn has resulted in a high level of rigidity, sub-optimal performance of applications and staff, along with unnecessary costs.

The time has come to take stock, shed excessive costs and development barriers, and take the current IT assets to the next level, making it a major contributor towards the realization of organizational strategy.

The solution is to decommission, reengineer or re-host applications and databases where appropriate, thus creating a leaner, more agile and cost effective

IT. The challenge is to know where to apply the appropriate strategy.

With help of the HWTC Application Data Mining technology, and methodologies, organizations have a partner with whom multi dimensional analysis of application and database data can be conducted, contributing to a very clear picture of the behavior, usage, dependencies, and interdependencies of each application. This is the basis for an objective application modernization roadmap.

## THE CHALLENGE

Without sufficient knowledge in a transparent format, it is virtually impossible to make an objective and accurate decision upon a reliable and successful application strategy.

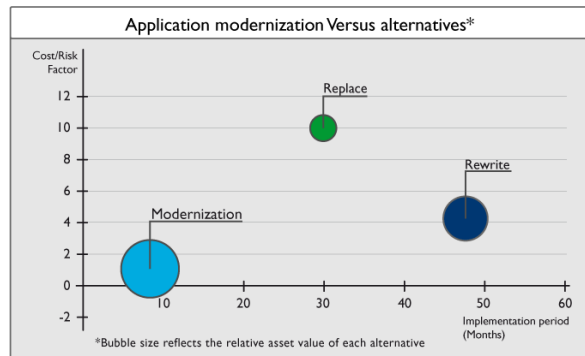
AUDI decided the need to conduct an in-depth analysis of the existing applications and databases hosted on the AUDI mainframe, remembering of course the inter-dependencies within AUDI and those external to AUDI.

The analysis should result in a clear picture of the AUDI application landscape at multi levels of granularity, entailing a decision matrix which in turn delivers a modernization strategy for each application which should be one of the 5 “Rs”;

- Retain: The application will be retained as it is on the mainframe
- Rehost: The application will be migrated to an open system platform (i.e. Windows, UNIX or Linux)
- Reengineer: The application will be redesigned and/or will be enhanced and modernized.
- Replace: The application will be replaced by a more powerful, more advanced or more cost effective application (typically by standard software).
- Retire: The application will be phased out

## RIP AND REPLACE?

It is also possible to replace or rewrite applications in order to have a more modern IT environment. However, as illustrated, it is generally more lucrative to modernize current applications as against the acquisition of new ones. (Replace) or to rewrite current one (Re-engineer). Retention implies status quo, whereby retire isn't always possible. Each application element needs very careful scrutiny before deciding upon the appropriate strategy.



## SOLUTION

“Top Down, “Bottom Up”

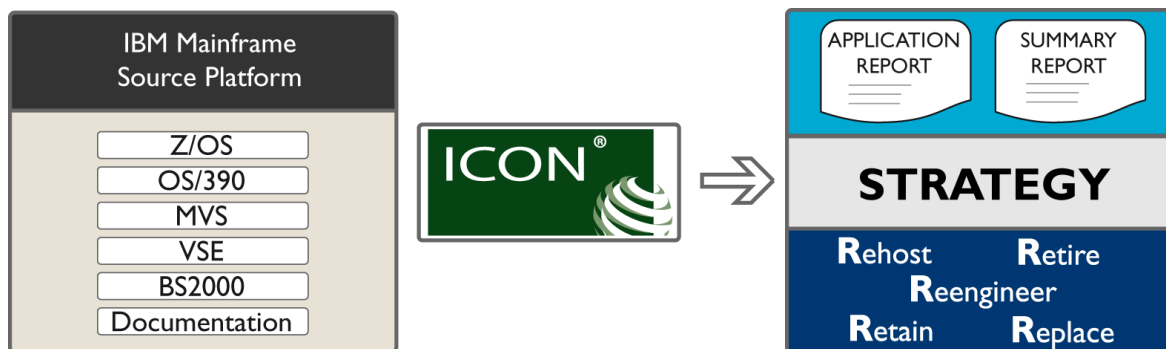
Employing the “Top Down” approach, methodologies are employed to elicit and process information from key application stake holders with a view to strategically positioning the applications and indeed to subjectively weight the importance of the application in the subsequent detailed analyses.

The “bottom up approach” is where HTWC get’s involved. This entails the deployment of the HTWC® automatic Application Data Mining application, ICON®. Application code is loaded into the ICON repository and analyzed. The initial

steps may involve code correction, which can be highlighted and conducted directly through ICON. Then the code is parsed, and application data is loaded into a specifically developed database. A suite of queries and reports is then employed to interrogate this database or indeed, custom queries and reports can be developed to do this in accordance with the situation. The process entails iterative loops of analysis and refinement until the required level of detail & granularity has been reached.

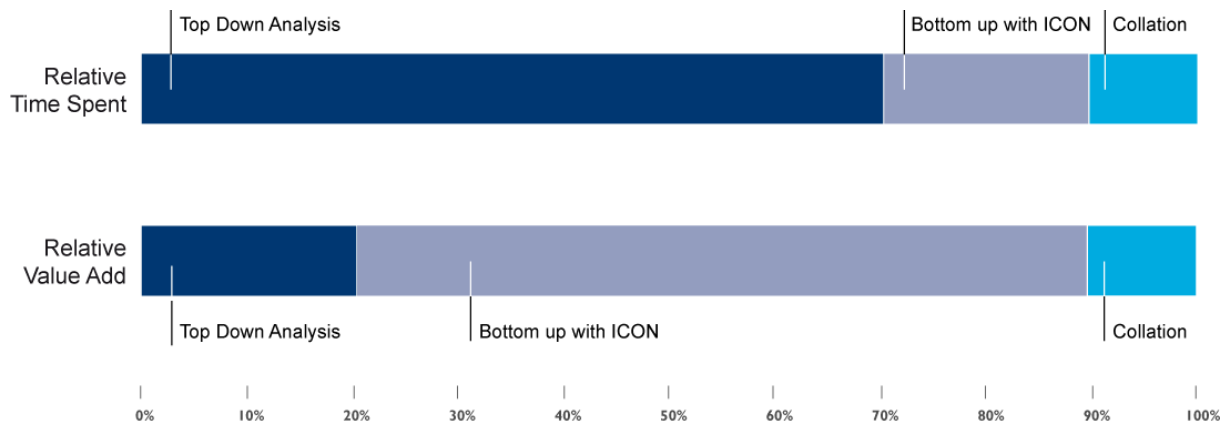
ICON is highly automated, and can be used by together with HTWC support and by client staff for subsequent analysis.

The ICON application is illustrated as follows;



Due to the automatic nature of ICON, more effort could be expanded upon the cultural and subjective side of such a project than the actual in depth analysis of the factual application status.

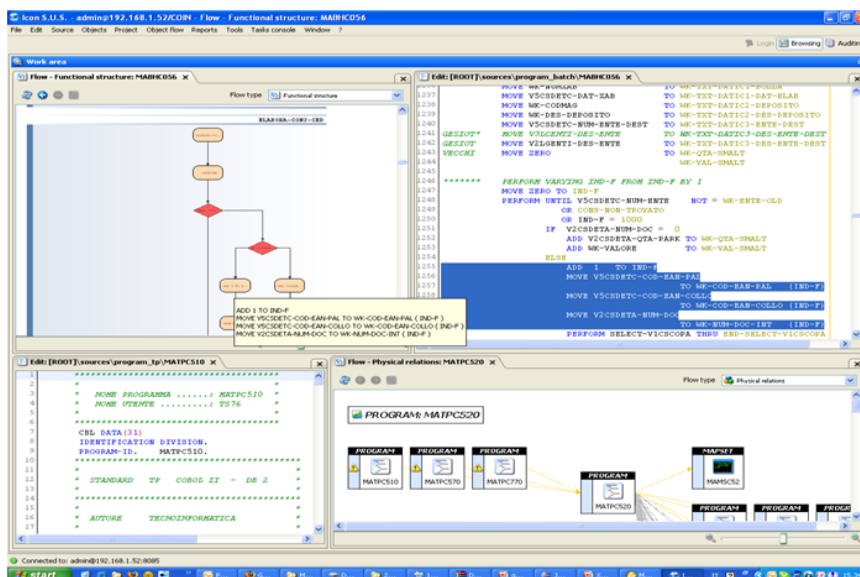
The cultural and subjective part of the project is conducted in parallel to the HTWC ICON engagement.



## RESULTS

Solid foundation for decisions regarding the modernization of the application landscape Dependencies, inter-dependencies, usage and importance of 240 Applications, containing over 80000 objects were all identified and weighted. The reporting application was customized so the client can view different aspects of the analysis to

confidently decide on the next steps. The implementation ensures that analysis can be repeated and updated at any time by employees of AUDI AG as the application landscape slowly changes, thus providing very key, fundamental tools for the management of the application modernization roadmap.



An example of an ICON view displaying a variety of perspectives of the application landscape;

- The logical flow of a program,
- The source code
- All the relationships where the program is involved into.

“The application structures on our host systems had grown historically. **Firstly** Prior to modernization, we had to make the current state of our application base fully transparent. For instance, we have applications that are rarely used but still tie up valuable resources. **Secondly**, we needed to address the issue of the knowledge drain: Who is familiar with the under - lying technologies? How can this knowledge be pooled? Is the application fit for use in a modern environment? **Thirdly**, we needed demographic transparency: Which knowledge workers

will opt for part-time employment prior to retirement – and when? These are exactly the individuals who are conversant with our custom-built solutions. After all, some of our applications are 15 to 20 years old, and expertise in these applications is inevitably on the decline. **Fourthly**, we had to assess the cost effectiveness of the existing application environment in comparison to that of a new environment.”

Armin Büttner, Chief Technology Officer, AUDI AG

## WE ARE HTWC

- The **ONLY** holistic provider of end to end modernization solutions
- The **ONLY** solutions provider to address **ALL** source Mainframe operating systems
- The **ONLY** solutions provider fully present throughout Europe
- Absolute market leader in mainframe re-hosting and migration
- **97%** of migration fully automated
- Over 30 years experience
- Truly global employing both direct and indirect distribution and fulfillment models
- Represented in all sectors