

RULE X PRESS

THE BUSINESS TOOL FOR EXPRESSING AND COMMUNICATING BUSINESS RULES.

TAX & CUSTOMS ADMINISTRATION

COMPANY	Regional tax authority
CHALLENGE	Improve the accuracy of the tax systems and enable business users to fulfill their responsibility to manage tax rules
SOLUTION	Use RuleXpress to document and make the tax code explicit and modernize legacy tax systems
RESULTS	Improved accuracy in tax collection and reduced future implementation complexity by 95%

This customer, who wishes to remain anonymous, is the tax authority for one of the regional governments in Europe. For historical reasons the regional government has its own set of tax regulations that are coordinated with the central government.

Information in this case study is based on customer interviews conducted by James Taylor.

© DECISION MANAGEMENT SOLUTIONS

CHALLENGE

The tax authority's primary responsibility is to calculate the tax obligation for all individuals and businesses in the local region. In the past this was a centralized business function. As the tax code has become more complex, the function has become more decentralized. The organization now has a structure similar to that of the tax code with groups focused on direct taxes, indirect taxes etc. Business people within each group are responsible for ensuring the tax regulations are applied correctly and that obligations are calculated accurately. But these business people don't know exactly how the legacy systems calculate tax obligations. As a result they have a number of challenges.

The system's calculation of tax obligation does not always match the regulations as written and the business people cannot explain why. This results in the inability to accurately assess taxes. When citizens prove they are right their tax obligation is put on an exclusion list. When the tax authority discovers individuals or businesses have more obligations this is put on an inclusion list. But the incorrect rules that caused the problem cannot readily be identified and corrected ensuring similar inconsistencies in the future. And the authority cannot adopt more sophisticated tax policies, something that has become a critical issue. In particular the ability to adapt the systems to detect potential fraud has been identified as crucial to future tax revenue stability.

To address these issues the authority determined that it must improve the communication between business people and IT staff. Given the need for business experts to interpret the legislation and for IT to develop systems to collect taxes, such communication has a direct impact on revenue collected and the fairness of the tax code. As citizens naturally focus on attempts to collect too much tax, any problems tend to reduce the amount of tax collected.

To succeed, the authority had to create a conscious and accurate linkage between the regulations and the current implementation. And it had to create an effective process for the ongoing improvement of the tax regulations. A precise language that could describe the implementation of the tax code without technical jargon was essential. Only then would the business people be able to take on their legal responsibility to manage the implementation of the tax code.

Attempts to use documents to document the rules were unsatisfactory because they did not allow the rules to be managed. Similarly the use of a business rules management system alone did not offer enough in terms of business user understanding. In particular the business users wanted to be able to write their rules in perfect natural language. Those who work with the legislation take language seriously and don't like to work with artificial words or phrasing. Business users would see pseudocode as a sign that this was IT work and that would undermine the kind of collaboration that was required.

SOLUTION

The authority adopted RuleXpress and the RuleSpeak approach to writing rules. Using RuleXpress, business users document the terms, facts and rules of the tax code. Each case or element of the tax code is considered. First a business user documents the rules and terms for the case working directly from the current legislation. RuleXpress allows these rules and terms to be defined in the local language **exactly** as the business user understands them. The rules and terms created are linked back to the original articles in the legislation so that it is clear which rules come from which articles in which pieces of legislation. A group of business experts then reviews these rules, seeking a consensus. Management criteria can be added to the original legislation to document exactly how it should be applied. The code in the legacy system is now reverse engineered and compared with the rules in RuleXpress. Sometimes the code reflects additional guidelines or criteria that need to be added to the specification. At this point RuleXpress contains an exact specification

of the rules required and final decisions can be made about the logic required to implement the particular article in the tax code.

Documenting all the business logic for the regional tax code in this way has taken just twelve months including a significant amount of training, adoption and change management effort. Both the external knowledge management consultant and business users in the group tasked with coordinating with IT use RuleXpress. RuleXpress allows non-technical users to access and update the rules and generate the reports that the IT and business departments need.

RuleXpress offers:

- **Easy and effective management of Terms**

RuleXpress provides complete term management, supporting term definition, information links and navigation facilities. Business users can see term definitions from rules, navigate, conduct impact analysis and determine traceability. Integrated look-up for Terms and automatic identification of defined Terms make it easy to use terms in rules.

- **Rule and term quality**

RuleXpress provides built-in quality checks for business rules and terms. These quality checks keep everyone focused and improve the clarity and usability of rules and terms. RuleXpress makes it easy to apply best practices and organizational guidelines.

- **Searching for rules**

RuleXpress allows sophisticated searches of the rules and their relationships allowing business users to find rules with particular kinds of relationships and then print the results of these searches to improve collaboration and understanding.

- **Derived terms**

The tool allows for effective connections between derived terms and the rules that derive them. This ensures that users can easily find out exactly how a term is derived.

- **Ease of use for business people**

Intuitive and easy to use, RuleXpress has a non-technical interface that allows non-technical users to create and manage business rules and terms. Users get up to speed quickly and find it easy to use day to day. RuleXpress avoids any use of pseudo code or technical jargon, and supports writing in local languages.

RESULTS

As the business users have developed their rules model in RuleXpress their understanding of both the tax code and its current implementation has grown. They have also been able to improve and correct some problems in the current systems, improving the accuracy of tax obligation calculations. In several cases the systems had errors in the code that had never been found before. These became clear once there was a definition of the rules that both the business users and their IT counterparts could understand. The authority has also been able to improve compliance with current regulations and have begun to provide feedback to improve the next cycle of legislation.

Besides these improvements in accuracy they also see a dramatic reduction in implementation complexity. For example, one piece of transformed legislation showed a 95% reduction in descriptive complexity. Where the traditional approach had required 4,700 words to describe the design and nearly **60,000** words to implement it, the complete rules based approach required just 2,800 words to describe and implement the rules.

PLANS FOR THE FUTURE

Our customer continues to use RuleXpress to understand, manage and improve their current tax system. Future plans could be the replacement of this legacy system with one built on a business rules management system. RuleXpress will ensure the right rules get built into this system from the start and will play a key role in ensuring that any automated case for an individual taxpayer can be linked back to the original regulation.