
IMPROVEMENT OF ELECTRONIC BIDDING CORE SYSTEM

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Purpose of Presentation

Purpose of this presentation is to talk about as follows :

- E-bidding and e-bidding software (our product)
 - Technical problem (Jan. 2016)
 - Solution
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E-bidding

- Method of connecting public office and bid participant via network
 - Series of bidding operations via network
 - Advantages:
 - Transparency of procedures
 - Improving quality and competitiveness
 - Reducing travel costs
 - Speeding up office work
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E-bidding Software

- Our product, name is “E-bidding Core System”
 - Package Software for building original e-bidding system
 - Many useful functions and strong security
 - Users are as follows:
 - 5 ministries
 - 47 Prefectures (100%)
 - 20 Cabinet designated cities (100%)
 - 736 Municipalities (42%)
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Introduction

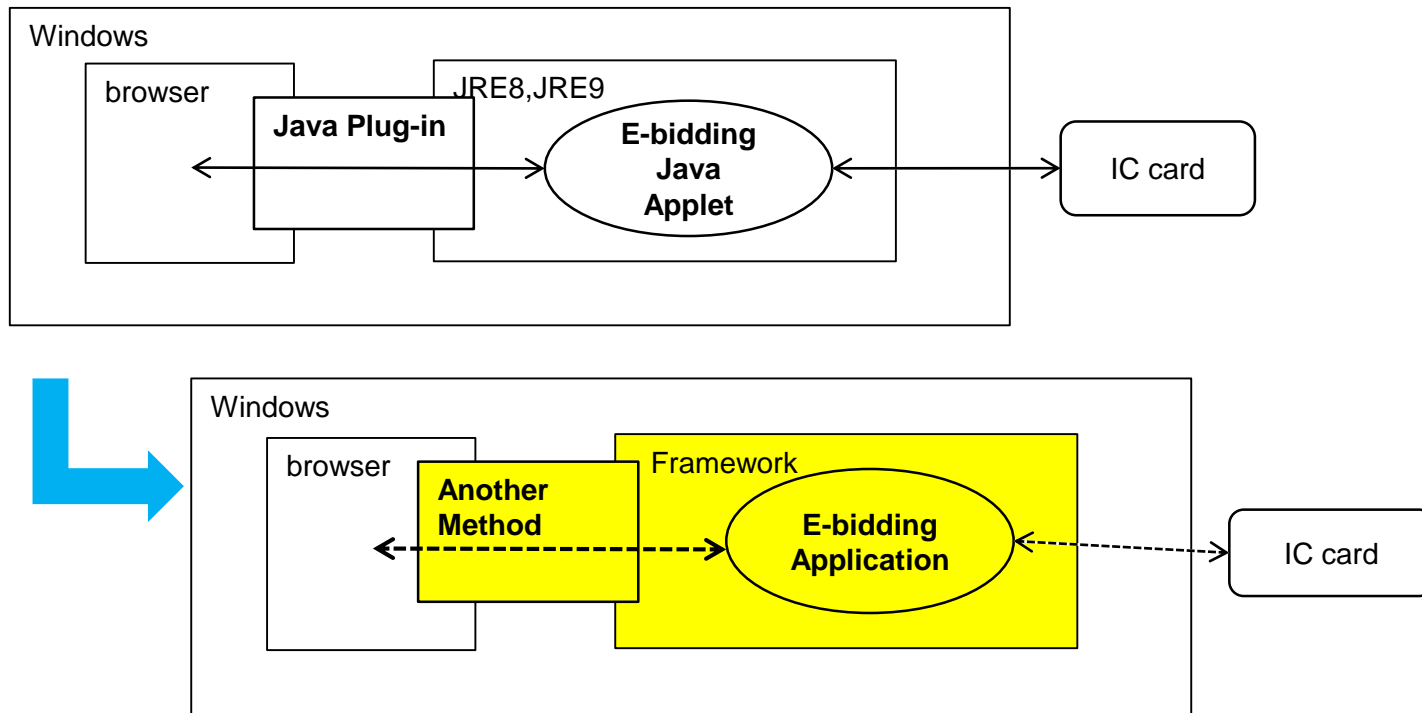
- In Jan. 2016, announcement that affect our product
 - deprecate Java plug-in in java9
 - remove Java plug-in in a future Java version
 - In Sep. 2017, release of Java 9
 - 32-bit version was not released
 - => Serious. Our product don't work on 64-bit version
 - Support period was changed (3 year => 0.5year)
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Introduction

- We decided our policy to this case:
 - Change method from Java plugin to other method
 - Rewrite Java applet program to other method program
 - Change programming language Java to other language
 - Pay more attention to security
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Introduction

Figure: PC side configuration of our software



Method

- Consider alternative method
 - Call for technical proposals
 - IT vendor(e-bidding consortium regular member)
 - Conditions for technical proposals are as follows:
 - Support service is available
 - Safety has been objectively confirmed
 - Appropriate programming language is adopted
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Method

- Research computer language and execution environment
 - Discuss with IT vendors, consult technical website
 - Viewpoint of research is as follows:
 - Use existing IC card and IC card reader/writer
 - Get security update (reliability)
 - Language design is close to Java and porting is easy. (portability)
 - Framework is available and It absorbs operating system updates (maintainability)
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Result Consider alternative method

- Develop new windows application (1)
 - Java plug-in => web Socket
 - Java Applet => windows application
 - Advantages:
 - Existing application interface.
 - .NET Framework
 - Disadvantages are as follows:
 - New delivery system and New helpdesk
=> asked private certificate authorities to support
=> agreed! => solved!
 - Notes:
 - Third-party security assessment is required.
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Result Consider alternative method

■ use browser extensions (2)

- Java plug-in => browser extensions
 - Java applet => Java Script
 - Advantages:
 - Use google store
 - Disadvantages are follows:
 - Future use of browser extensions are not guaranteed
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Result Consider alternative method

Comparison of the two proposal

	New windows app. (1)	Browser extension (2)
Use of existing interface	Yes	No
Development volume	Small	Middle
Security risk	Small	Large
Delivering system	Private Certificate Authorities	Outsourcing Google Store
Helpdesk system	Private Certificate Authorities	No

- We compared two proposals as viewpoint of development and operation
- New windows application proposal(1) is excellent in both viewpoint
=> We selected new windows application

Result Selection of development language

- We examined three language close to Java
 - JavaScript
 - Most used script language in the world
 - Easy to program
 - but we have to program with other language for IC card interface
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Result Selection of development language

■ C++

- Language close to Java
 - Advantages:
 - We can program IC card interface
 - Disadvantages:
 - Specification is complicated. Longer program
 - Memory must be managed by user program (cause of memory leak)
 - Since compatibility is not considered, we have to program for each Operating System
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Result Selection of development language

■ C#

- Both C# and Java originate from C++
 - Removing C++ complexity
 - Can be operated in multiple environments
 - Like Java, it have memory management function
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Result Selection of development language

- Based on the following viewpoints, we decided to adopt C #
 - We can get vendor support.
 - We can get security updates
 - Specifications are simple
 - automatic memory management
 - Migrating from Java language is relatively easy
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Discussion

- Significance of this research
 - Selected a method to reduce future vendor risk
 - Minimized size of porting program
 - Got third party assessment.
 - Got right results for problem?
 - Discussing technical proposals with IT vendors who have technical capabilities and knowledge of e-bidding system
 - We got right results
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Discussion

- Part that seems to be missing
 - Internet explorer 11 (IE11) was only browser for e-bidding
 - For sudden end of IE11 support, we had to prepare Measures
 - New viewpoints discovered from this research
 - Check Microsoft's information more carefully
 - Check contents of Windows Update more early, verify operation, and provide information to public office
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Conclusion

■ Conclusion

- We could avoid worst situation:
 - Authorities prohibit all e-bidding systems for security reason
 - All bidding systems return to paper bidding
 - We will continue to take the following actions:
 - Check trends of package-products e-bidding use more carefully
 - If we catch possibility of risk, consider measures as soon as possible
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Thank you very much
for your listening.

Watermelon pattern gas holder =>

My home town
Tomisato city, chiba pref.
Japan. Near to Narita Airport

