

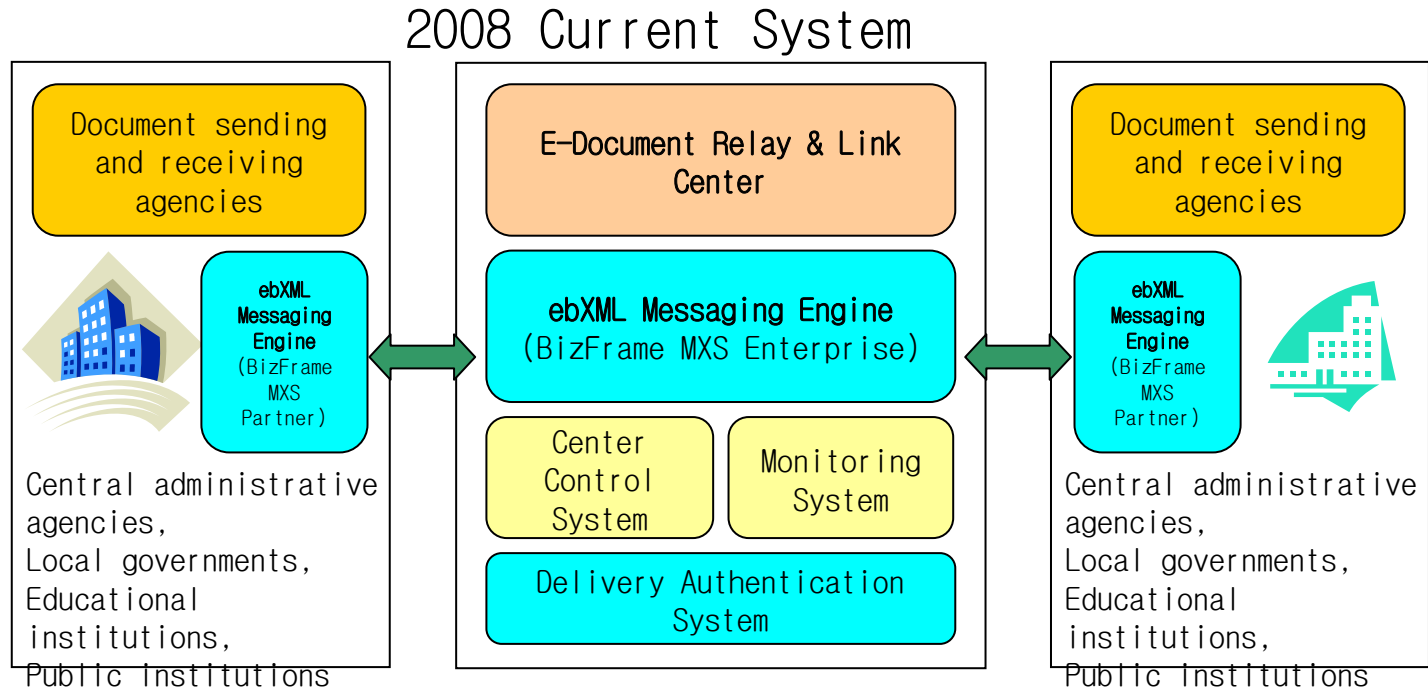
Implementation of Open Standards in Public Sector

2008. 10



❖ What is Relay System

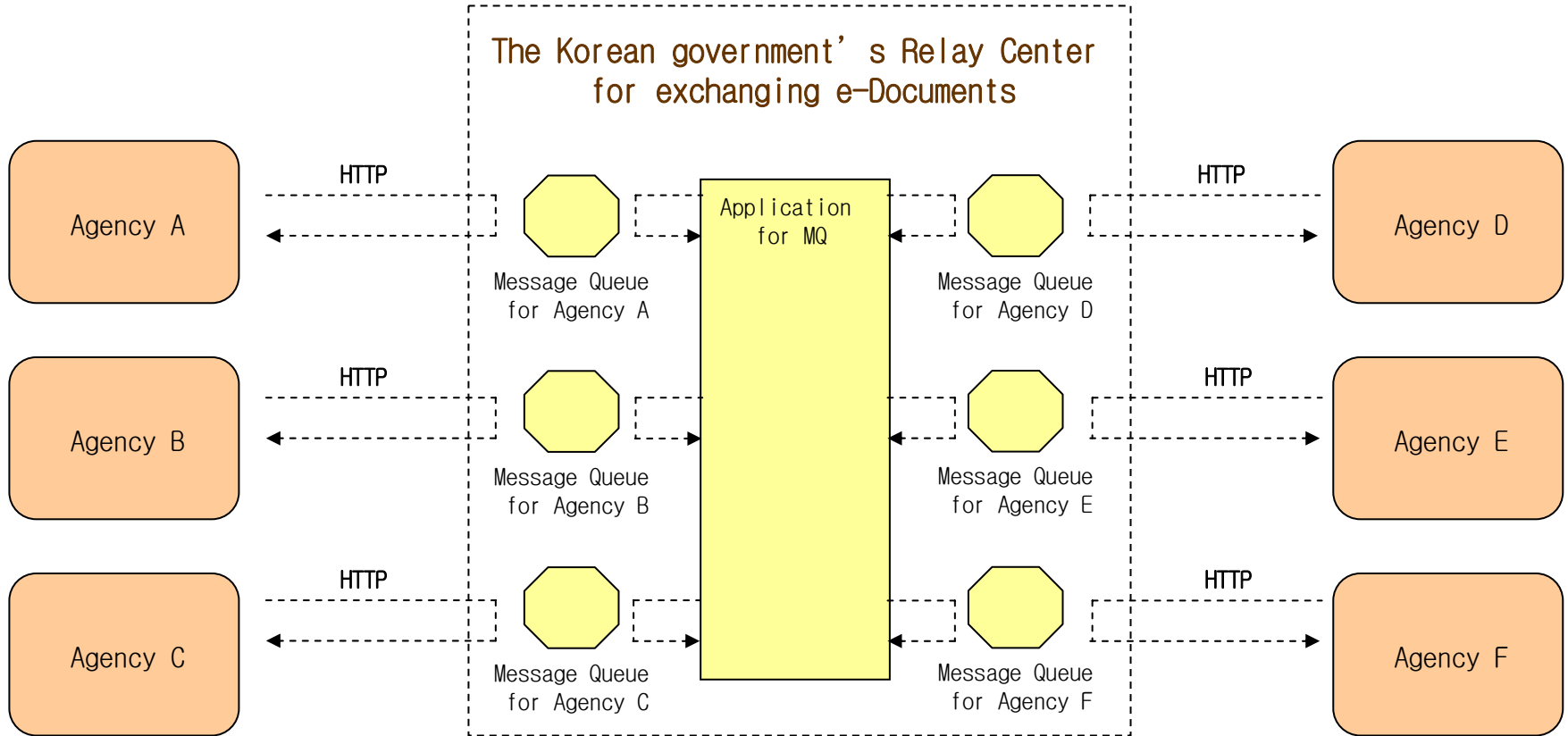
The e-Document Relay & Link Center has been established and operated for the purpose of supporting administrative agencies and public institutions. This center plays a core role in the e-Government Project with an aim to introducing a system that **enables all documents to be processed electronically between any org to org**



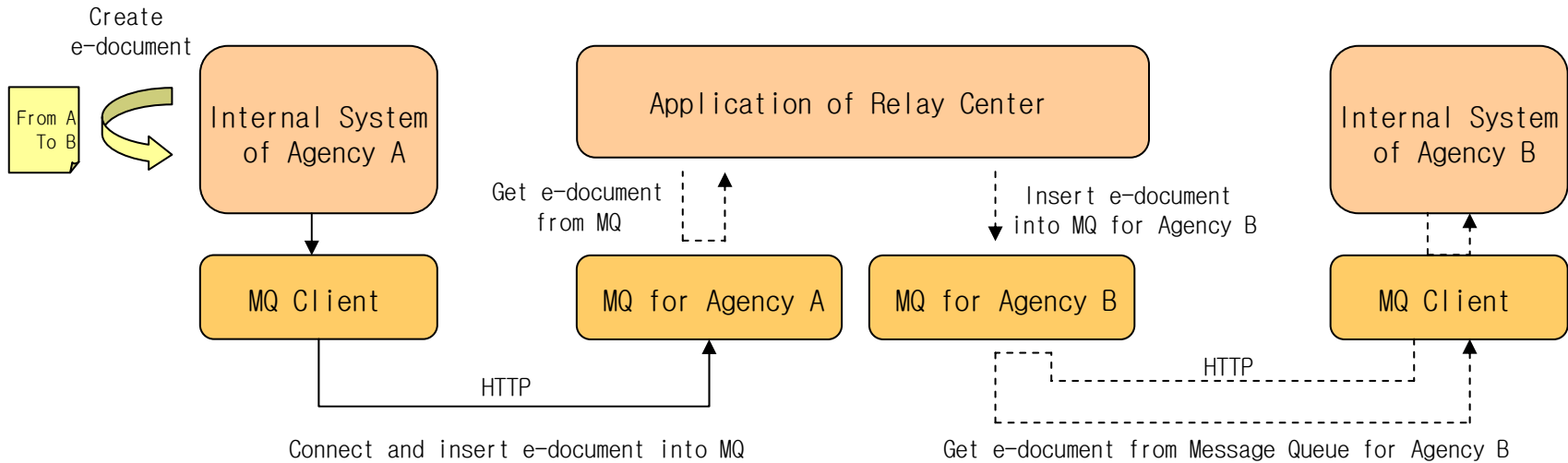
❖ History

- 2001 01 ~ 2003 12 : Previous system (based on MQ)
- 2004 06 ~ 2004 12 : ISP Project for advanced of the e-Document Relay & Link System
- 2005 06 ~ 2005 12 : Establishment of the e-Document Relay & Link System for public institutions in accordance with the international standard (ebXML Messaging Service)
- 2006 05 ~ 2006 12 : Upgrading of the existing Relay & Link System (for administrative agencies) to meet the requirements of the international standard (ebXML Messaging Service)
- 2007 05 ~ 2007 12 : Establishment of the Delivery Authentication System to prevent the denial of document sending/receiving and fabrication

❖ The model of previous system



❖ The flow of e-Document in previous system



- Agency A connect and insert e-document to Queue in Relay Center through MQ client.
- Application of Relay Center get e-document from Queue for Agency A and insert e-document into Queue for Agency B after processing it.
- Agency B' s MQ client monitored periodically the Queue for them and if find a message in their Queue, get it.

❖ Shortcomings of the previous system

- MQ itself can not support the Reliable Messaging.
- High cost and time needed to extend.
- Hard to load balance.
- Not push, But get (The transferring of e-Document needs real-time.)
- MQ itself does not guarantee the connection between MQ client and MQ Server.
- If disconnection occurs between MQ Client and MQ Server, Queue Manager becomes unstable status.

❖ Customer' s needs

- Reliable messaging
- Load balance for high traffic message processing
- Easy to Extend
- Easy Error Handling
- Infrastructure based on International Standard

❖ ISP

Issue:

- There are considerable numbers of e-documents exchanged between the government agencies and many other institutions would like to exchange their e-document by using the Relay Center.
- While the Relay Center Project had already succeeded in facilitating the exchange of information between the partners with MQ, there were still shortcomings in respect to the extensibility and reliability.
- A software solution was required that would reduce the cost and increase the reliability and extensibility.

Decision

ebXML Messaging Service Specification V2.0 fits the requirements of the Relay Center ideally.

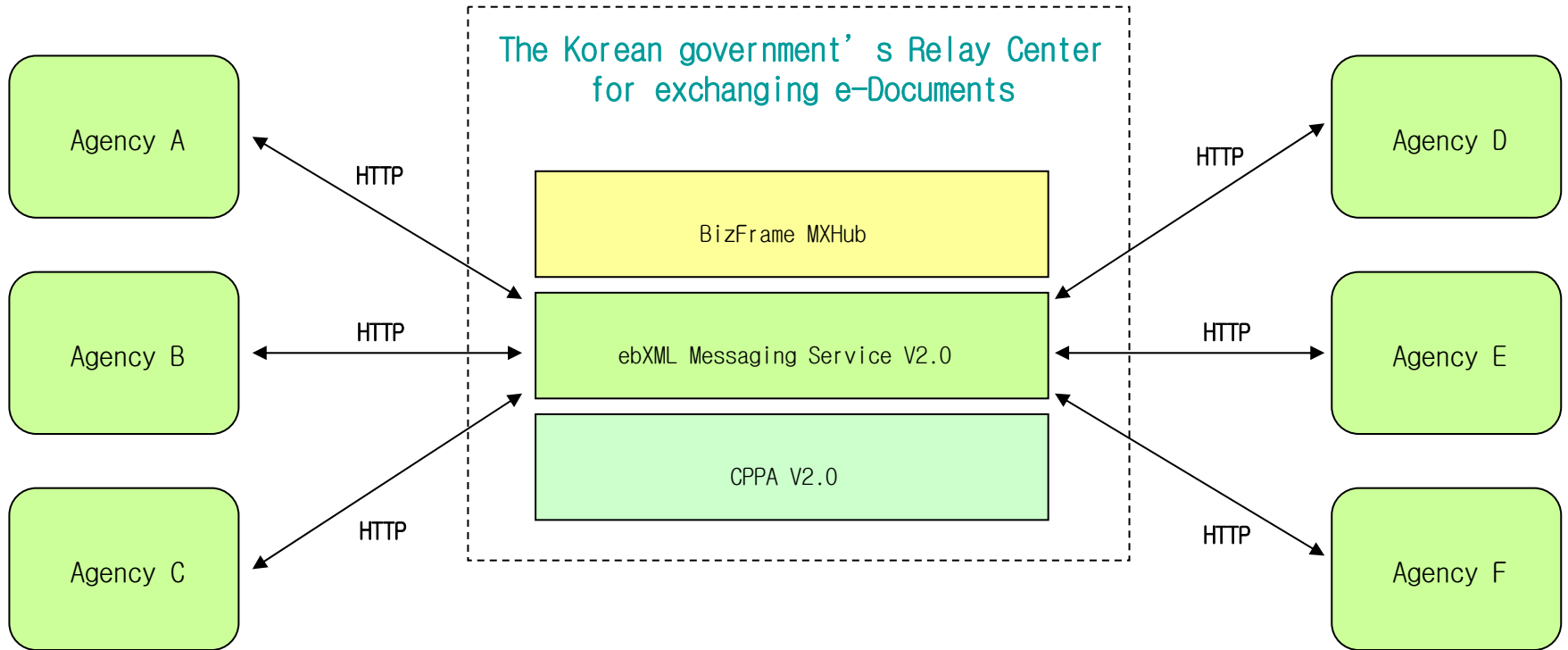
❖ Decision Points for the new Infrastructure

- Solution based on open standards, ebXML Messaging (OASIS Standard, ISO 15000-2)
- Secure messaging (encryption) for sensitive information
- Scalable and expandable application for fast adjustments to new requirements
- Independence through open standards, no dependency from proprietary vendors
- Easy implementation of interfaces (clients) for the various business partners
- Interoperability, easy inclusion of new partners into the network

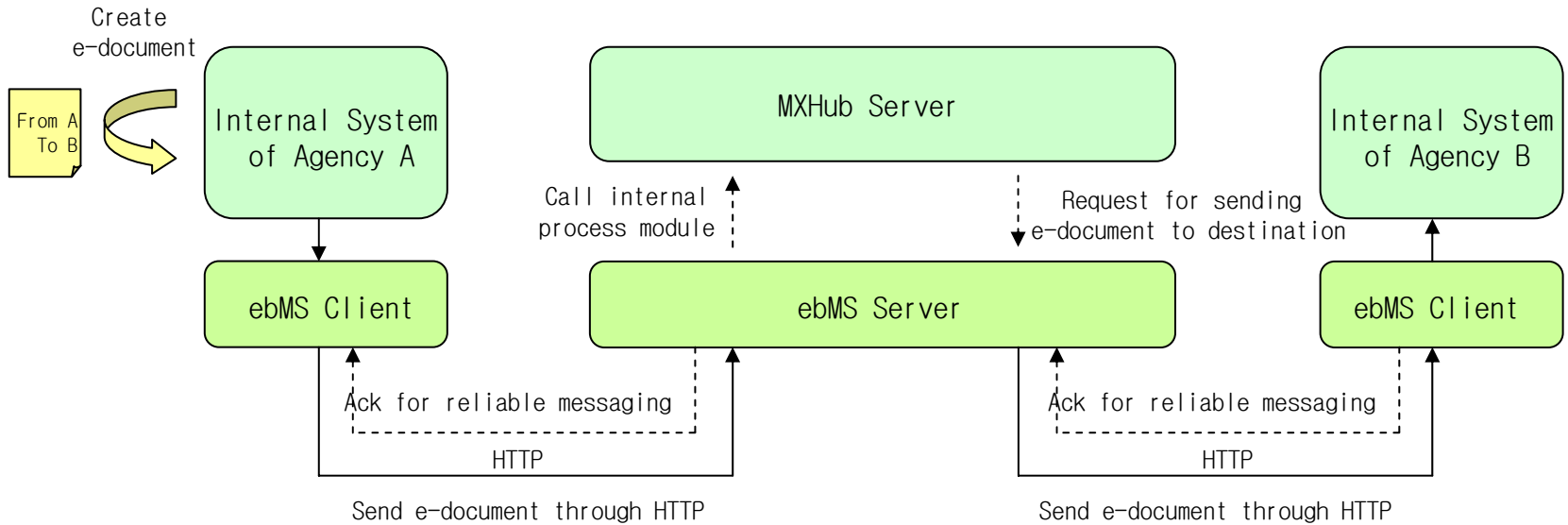
❖ What is ebMS

- ebXML Message Service Specification v2.0 (ISO 15000-2)
- Provides enhanced high-quality exchange of electronic business documents for B2B transactions between trading partners
- Supports transporting formats and message service protocols for transactions between trading partners of any business scale
- Guarantees reliable and secure data exchange through encryption / decryption and digital signatures as well as the services of delivery acknowledgement, duplicate message handling, lost message handling and error handling services
- Supports any sort of payloads including XML, EDI and binary data

❖ The model of new system



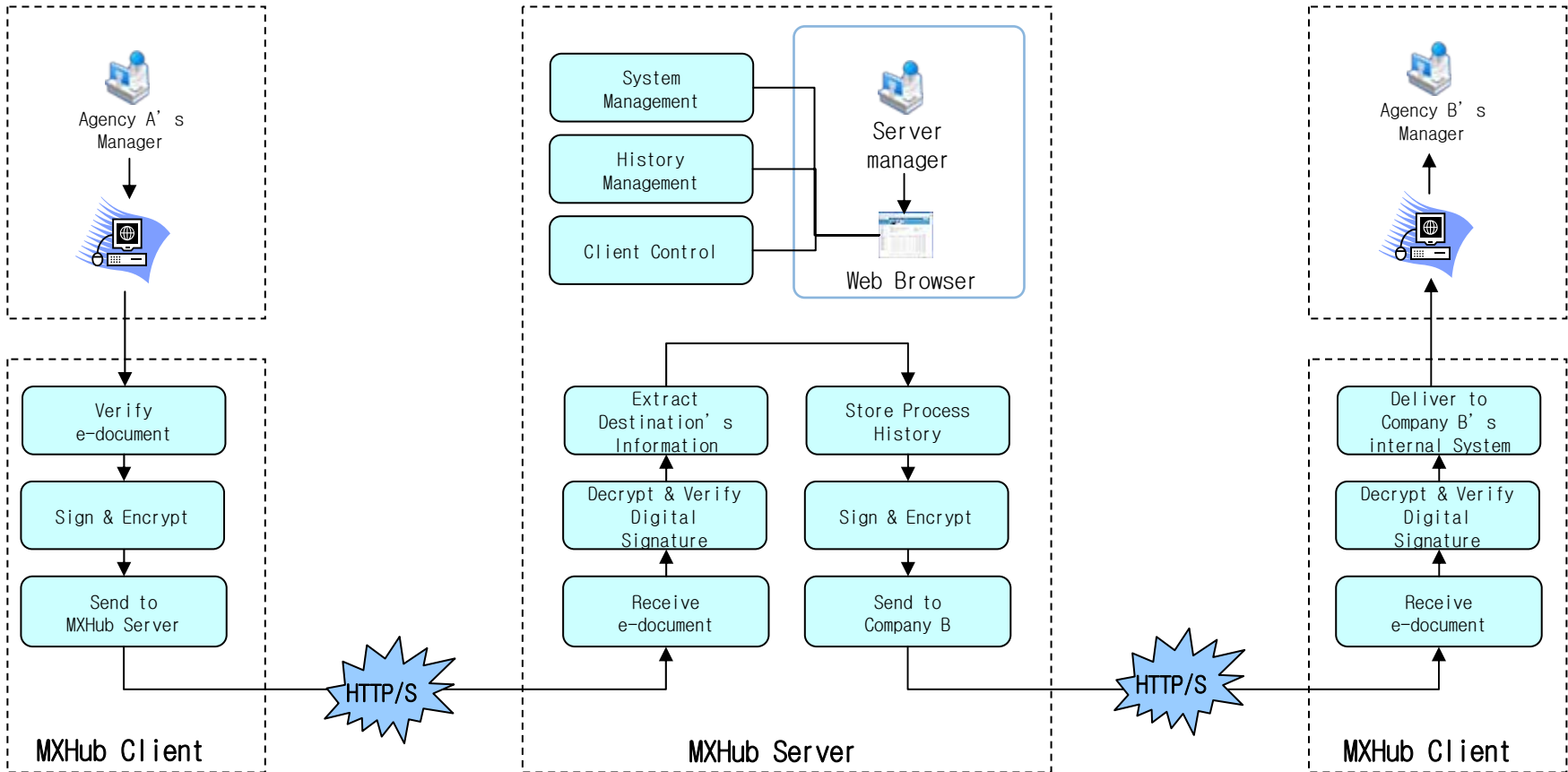
❖ The simple flow of e-Document in new system



- Agency A send e-document to ebMS Server in Relay Center and receive acknowledgement automatically.
- ebMS Server call MXHub Server module of Relay Center and process it.
- MXHub Server module request for sending e-document to destination.
- ebMS Server send e-document to Agency B and receive acknowledgement automatically.

❖ Detail flow of e-Document in new system

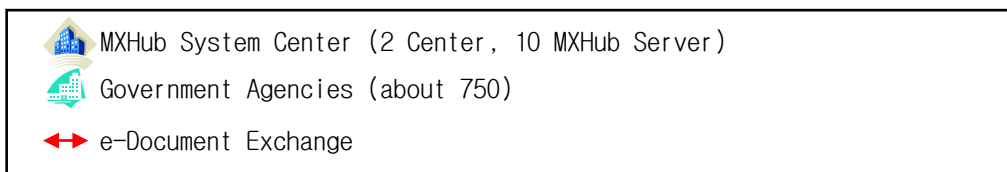
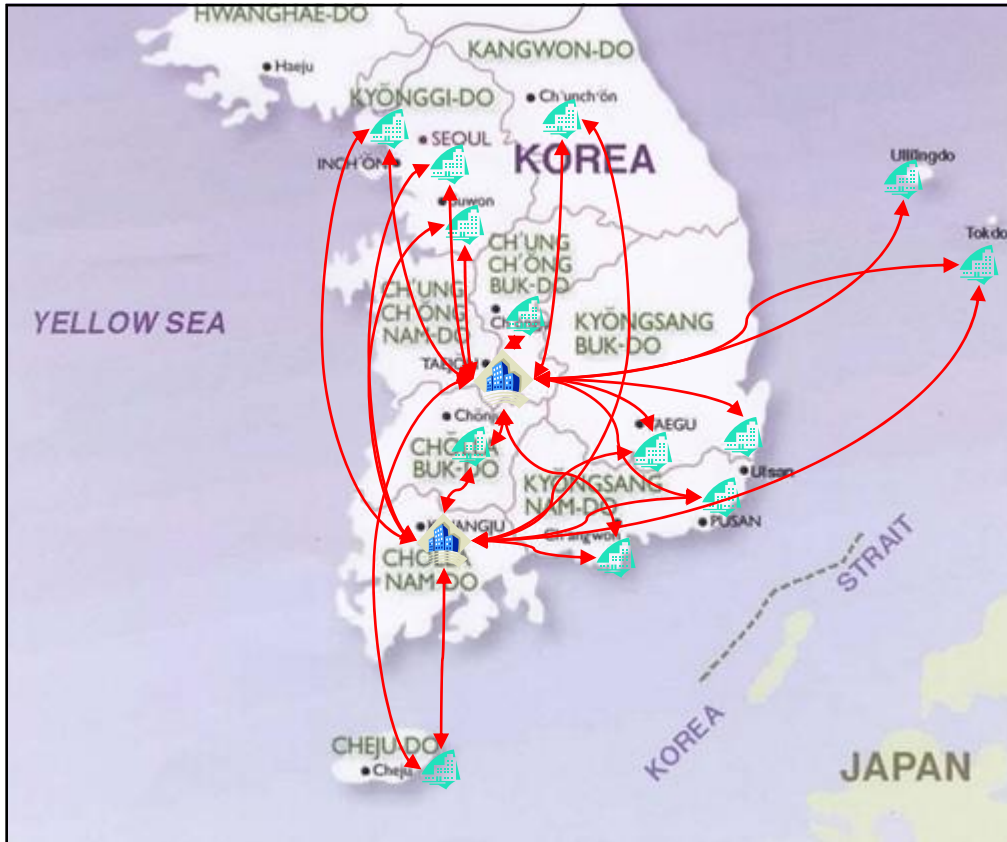
- Scenario : Agent A want to send e-document to Agent B



❖ Meet following International Standards

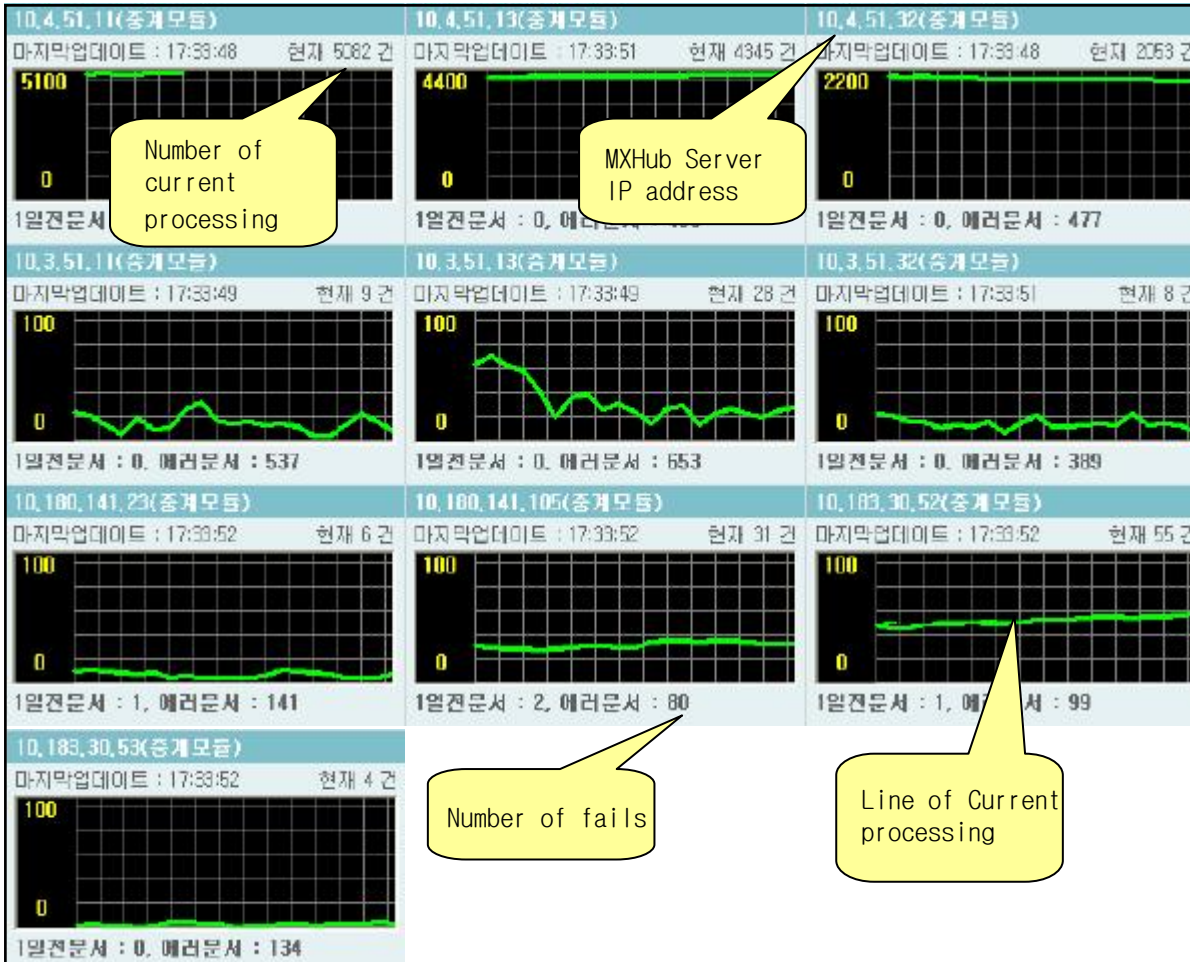
- ebXML Collaboration Protocol Profile & Agreement v2.0 (ISO 15000-1)
- ebXML Message Service Specification v2.0 (ISO 15000-2)
- ebXML Messaging Services v3.0
- Web Services Description Language (WSDL) 1.1
- Simple Object Access Protocol (SOAP) 1.1
- SOAP Messages with Attachments
- XML-Signature Syntax and Processing
- XML Encryption Syntax and Processing
- Web Services Reliable Messaging v1.1
- WS-Reliability 1.1
- Web Services Security: SOAP Message Security 1.0
- Web Services Addressing 1.0

❖ Geographical View



- The MXHub System is currently used among a total 750 government agencies. That means all of Korean Government agencies are using the MXHub System for their e-Document exchanging.
- And the MXHub System is currently used by 43 administrative information systems, such as the Government e-Procurement System(G2B), the Government for Citizen System(G4C).
- The Ministry Of Public Administration and Security adopt ebXML Messaging Service V2.0 for their e-Document Relay/Link System and selected BizFrame MXHub for their ebXML messaging exchanging solution.

❖ Screen Shot - 1



- These graphs are a capture of real monitoring systems. There are 10 MXHub server for exchanging all Korean government agency's e- Documents and each graph indicate each server's status.
- BizFrame MXHub Server is processing about 1,000,000 e- Documents per day.

❖ Screen Shot - 2

문서관리 > 중계문서관리 > 문서이력

문서제목 제16회 교육방송 연구대회 계획서 제출자 명단 알림

[총 4 건]

처리일자	송신기관명(부서명)	수신기관명(부서명)	문서상태	송신일자	송신자
2008-05-07 10:08	경상대학교 사범대학 부설중학교	경상남도교육청 교육국 중등교육...	접수	2008-05-07	김혜연

문서상세처리 이력조회

문서 ID	H0000008127000058085300000655370000010
문서 제목	제16회 교육방송 연구대회 계획서 제출자 명단 알림
송신 기관	경상남도교육청 교육국 중등교육과
수신 기관	경상대학교 사범대학 부설중학교

MXHub Server's Process logs.

MXHub Client B's internal process logs.

All history of E-document processing

MXHub Client A's internal Process logs.

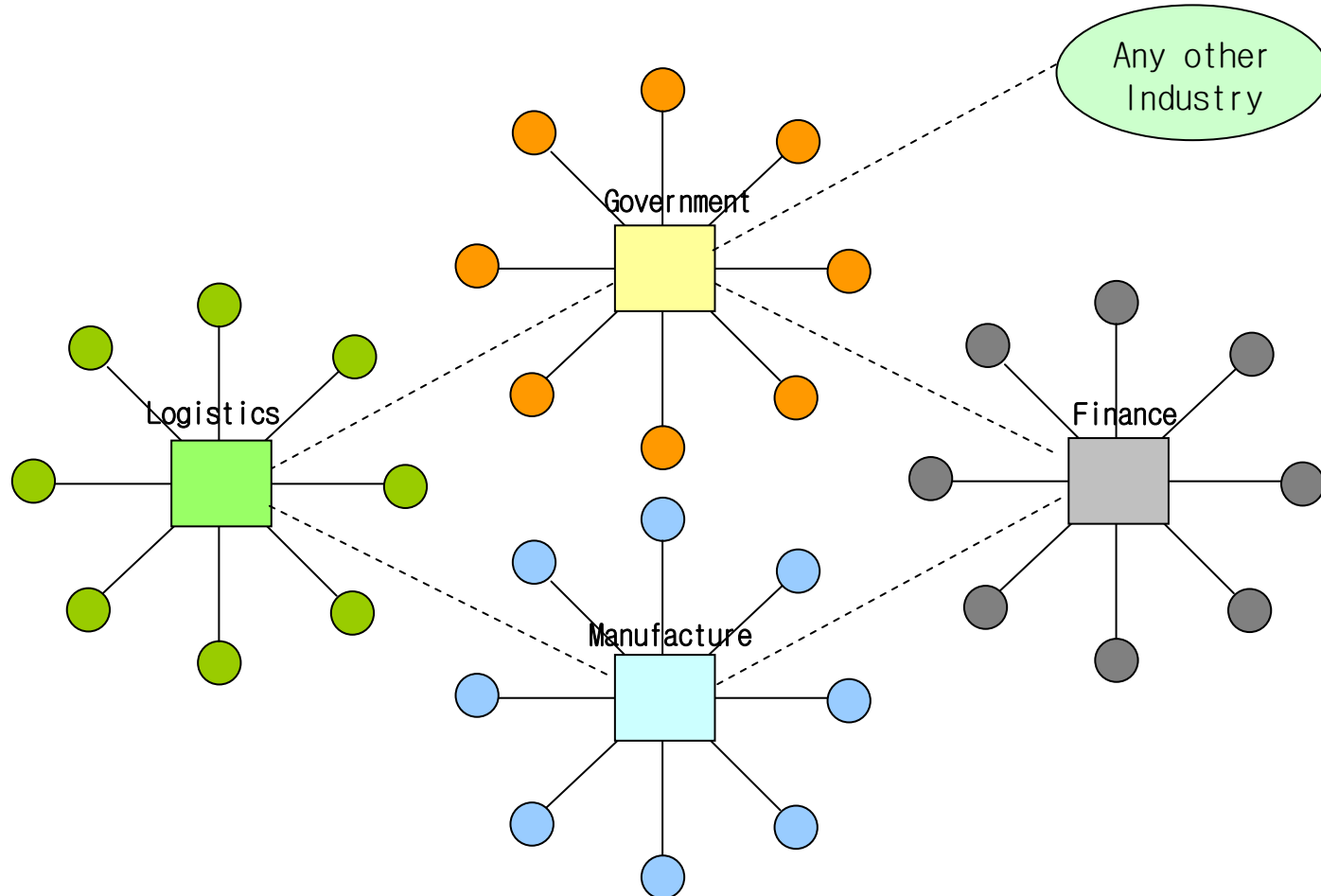
[송신기관 로그]					[센터 로그]					[수신기관 로그]				
처리일시	문서유형	처리단계	상태	비고	처리일시	문서유형	처리단계	상태	비고	처리일시	문서유형	처리단계	상태	비고
2008-05-06 18:02:10	send	파싱	ok	-	2008-05-06 18:01:16	send	받음	ok	-	2008-05-06 18:00:12	send	받음	ok	-
2008-05-06 18:02:10	send	암호화	ok	-	2008-05-06 18:01:17	send	복호화	ok	-	2008-05-06 18:00:13	send	복호화	ok	-
2008-05-06 18:02:10	send	보냄	ok	-	2008-05-06 18:01:21	send	암호화	ok	-	2008-05-06 18:00:13	send	저장	ok	-
2008-05-06 18:02:32	arrive	받음	ok	-	2008-05-06 18:01:22	send	보냄	ok	-	2008-05-06 18:00:16	arrive	파싱	ok	-
2008-05-06 18:02:32	arrive	복호화	ok	-	2008-05-06 18:01:31	arrive	받음	ok	-	2008-05-06 18:00:16	arrive	암호화	ok	-
2008-05-06 18:02:32	arrive	저장	ok	-	2008-05-06 18:01:31	arrive	복호화	ok	-	2008-05-06 18:00:17	arrive	보냄	ok	-
2008-05-06 18:02:37	receive	받음	ok	-	2008-05-06 18:01:32	arrive	암호화	ok	-	2008-05-06 18:00:26	receive	파싱	ok	-
2008-05-06 18:02:38	receive	복호화	ok	-	2008-05-06 18:01:32	arrive	보냄	ok	-	2008-05-06 18:00:27	receive	암호화	ok	-
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2008-05-07 10:09:38	accept	저장	ok	-	2008-05-06 18:01:37	receive	보냄	ok	-	2008-05-07 10:07:25	accept	보냄	ok	-
					2008-05-07 10:08:35	accept	받음	ok	-					
					2008-05-07 10:08:35	accept	복호화	ok	-					
					2008-05-07 10:08:35	accept	암호화	ok	-					
					2008-05-07 10:08:35	accept	보냄	ok	-					

❖ benefits of the new system

- Korean government can reduce the additional expenses for the participants joining later.
- The same interfaces can be used regardless of the partners and the cost can be cut for additional implementations.
- Ensures the basis for the expansion of the e-business standards over all the industries.
- Activates the international standards and overcome the high cost and low efficiency of the existing MQ.
- High potential economic effects

❖ Future Plan

- Apply to all other industries



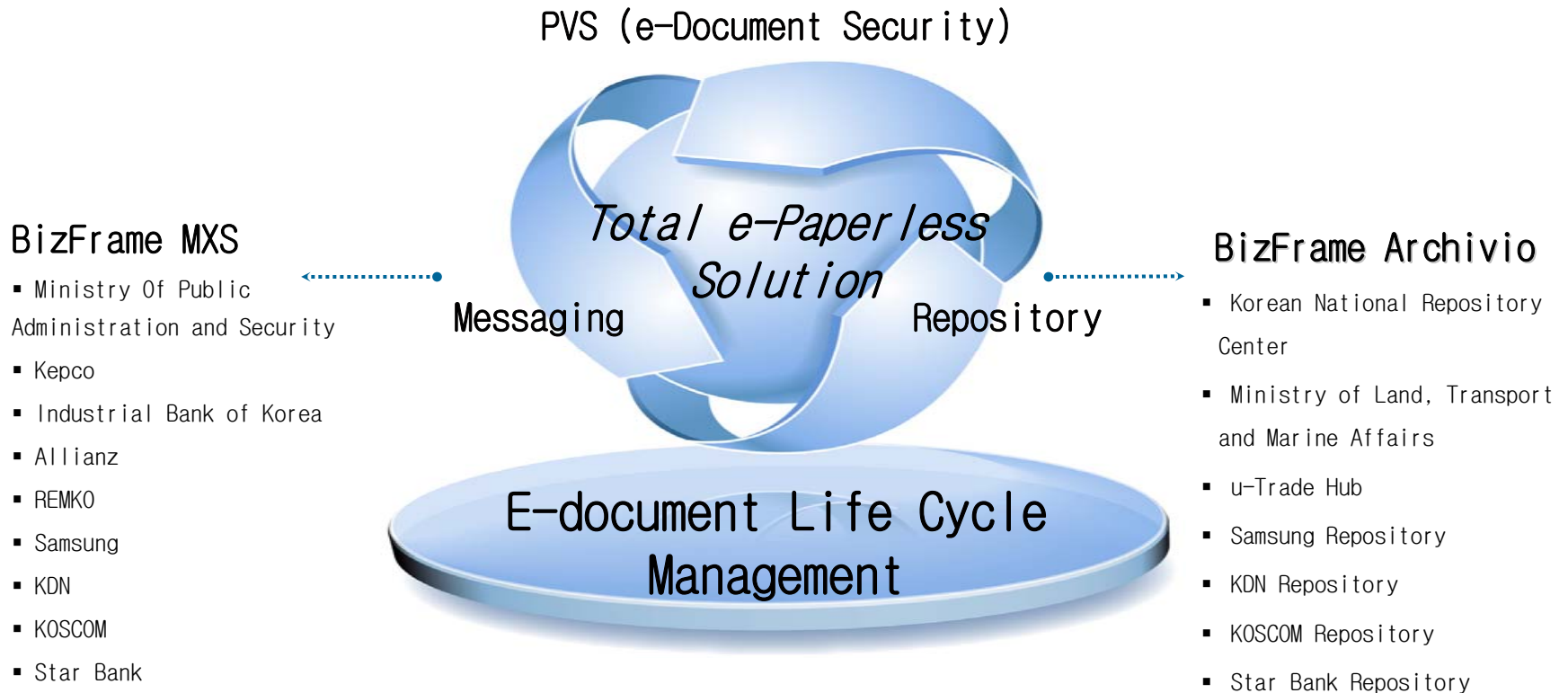
❖ Conclusion

✓ Infrastructure based on international standard of e-business improves the Efficiency and reduces the Cost.

✓ ebXML is a strong alternative against MQ, EDI and other non-Standard based way

❖ Torpedo is...

Torpedo is a leading electronic document management software company that enables paperless business.



❖ Other Related Reference Site



Ministry Of Public Administration and Security



Korea Electronic Power Corporation



Korea Institute for Electronic Commerce



Ministry of Land, Transport and Marine Affairs



Allianz Life



Industrial Bank of Korea



Korean Agency for Technology and Standard

❖ Thanks

BH KIM

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