



TIS INTEC Group Business Information Meeting

Modernization Services

December 3, 2024

TIS Inc.



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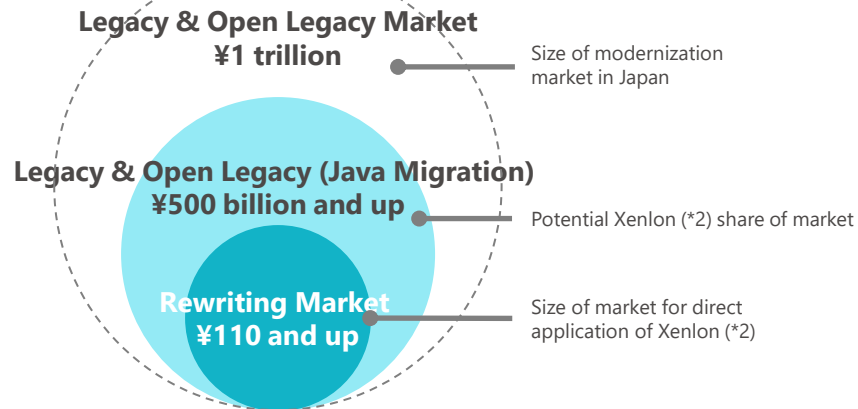
**TIS Inc.
Senior Executive Fellow,
Industries & Public Solutions SBU,
Financial Industry SBU,
and Technology & Innovation SBU**

TIS' Modernization Services

Position modernization as growth driver in Industrial IT Business and Financial IT Business pursuits under the current medium-term management plan (2024-2026) and work on **measures (modernization services) to address the risk of social and corporate stagnation and decline inherent with legacy systems.**

Size of Modernization Market in Fiscal 2024 (*1)

Market with high growth potential over next 5-10 years



*1 Based on "Legacy & Open Legacy Migration Market Trends 2024 Edition (mic-r.co.jp)," by Deloitte Tohmatsu MIC Research Institute Co., Ltd., published in August 2024, and TIS research data

*2 TIS proprietary migrator (rewrite tool)

Estimated Business Scale over Medium to Long Term



Factors key to reaching targets

Lead market with **Xenlon** proprietary migration tool

Commit medium to long-term, from promotion of projects using Xenlon to helping clients achieve DX goal

Ensure feasibility with **extensive track record and knowledge gained through large-scale projects**

1. Market trends in modernization services and TIS engagement
2. Xenlon's track record and strengths
3. Efforts to further expand business activities

1. Market trends in modernization services and TIS engagement

Trends and Issues in Modernization Market

- Such legacy assets as mainframes, which have long supported corporate activities, run risk of becoming liabilities that lead to social and corporate stagnation and decline.
- Trend toward open standards rapidly gaining momentum as major manufacturers end production and support for legacy systems and maintenance costs soar.

End of maintenance and support for legacy assets

- End to production and support by major manufacturers, soaring maintenance costs for both legacy and open legacy products
- Rapid increase in number of companies considering system renewal not just in time for the 2025 digital cliff but beyond with an eye to modernization in 2030 and 2040



Left unchecked, situation will lead to increase/expansion of **technical debt**

Shortage of IT engineers

- Anticipating shortage of engineers with ability to maintain existing legacy systems (reliance on specific languages and packages)
- Demand for IT professionals in Japan expected to reach about 1.58 million by 2030, but IT industry facing shortage of about 450,000 IT engineers (according to Ministry of Economy, Trade and Industry)



IT engineer shortage becoming chronic issue

Complicates introduction of new technology and presents risk of restricted corporate growth

- IT technology continues to evolve, but inability to introduce latest technology could hinder companies' business growth
- Open systems are absolutely essential in era where sense of speed is vital to business success

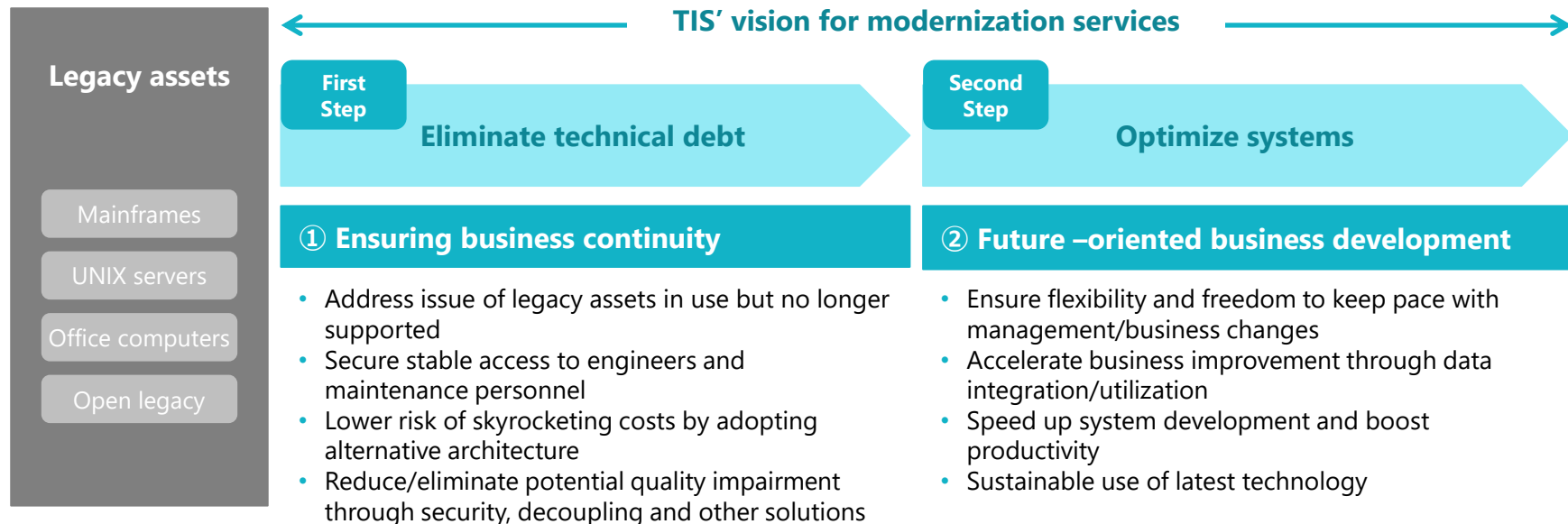


Open systems make **use of latest technology** sustainable

Modernization is necessary investment to **avoid risk of social and corporate stagnation and underpin future business growth/transformation**

Definition and Scope of Modernization Services

- Modernization services are not one-off pursuit but rather a business category that will support future corporate expansion through continuous efforts to optimize client IT systems.
- Modernization services are defined under the following two steps.
 - First step: Approach aimed at ensuring business continuity by eliminating technical debt, namely, efforts to reduce costs and sidestep EOS (End of Support) issue.
 - Second step: Approach aimed at optimizing systems to promote DX shift, including measures to ensure system agility and flexibility, and expanding clients' corporate activities for the future.



TIS Special Features/Sler Advantage in Modernization Market

- Combination of proprietary rewrite tool Xenlon and long-standing expertise as a system integrator (Sler) afford TIS with capability to demonstrate strengths and advantages in modernization services.

Ownership of proprietary migration tool Xenlon

Offer access to Xenlon migration tool boasting high migration rate, accuracy, performance and maintainability

- Having our own migration tool underpins continuity of improvement and growth and drives constant expansion of scope and breadth of support to clients
- In core system upgrade projects where long-term use is a given, we preclude risk of issues and problems arising from black box created by other companies' tools including speed of resolving technical issues, change in direction due to acquisition of manufacturer, and change/increase in price.

Support for projects hinging on Xenlon, from project promotion to DX

Commit, with medium- to long-term perspective, to projects utilizing Sler advantage

- Underlying advantages, such as Xenlon's high migration rate, support methodology, track record and implementation know-how that enable us to realize stable progress and high productivity on projects
- We not only eliminate technical debt but also commit to meeting needs of corporate clients by accompanying them on journey of subsequent processes, such as maintenance, development and operation after system cutover, as well as proposing and realizing optimal architecture

Apply extensive experience and knowledge related to large-scale projects to ensure feasibility

Possess capability and track record to carry out long-term, large-scale projects

- Boast project management know-how for successful completion of large-scale projects beyond rewriting as well as ability to mobilize domestic and international partners involved in project execution
- Apply risk and troublespot reduction approaches, such as assessment by engineers familiar with characteristics of rewriting, and efficient methods and know-how for quality assurance at testing phase

Efforts to Date

- Xenlon, a focus of attention now, launched about 10 years ago, in 2014, and over the years has been adopted by a wide variety of companies across different industries/sectors and introduced to more than 10 companies in total.
- For some clients, business relationship with TIS continues even after system cutover, with TIS addressing large-volume requests covering system maintenance and operation.

Background to launch

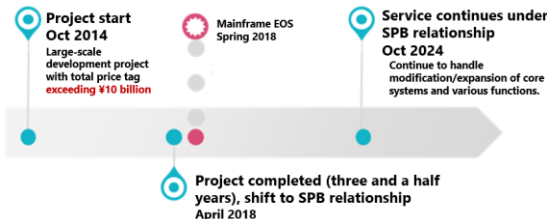


In-house development of Xenlon migration tool with high migration rate

- No tools were available in Japan or overseas with guaranteed performance capability
- Apply TIS architects' experience in designing and implementing interpreters and compilers to develop migration tool based on accumulated knowledge to ensure performance

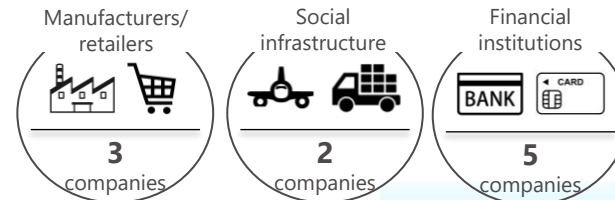
First application of Xenlon was large-scale development project

Successfully migrated system with **more than 10 million steps** just for COBOL to Java



First stage business growth (2014–2023)

Support various clients in core system modernization (Number of companies using service: 10)



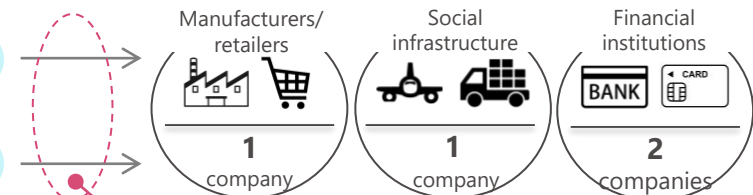
Build partnerships to promote continued business relationship

Second stage business growth (2024–) *Details in following slides

Expand lineup of modernization services and reinforce response structure

Established specialized response team for each client segment

- Financial
- Industrial



Improve provided value through expanded menu of services and functions

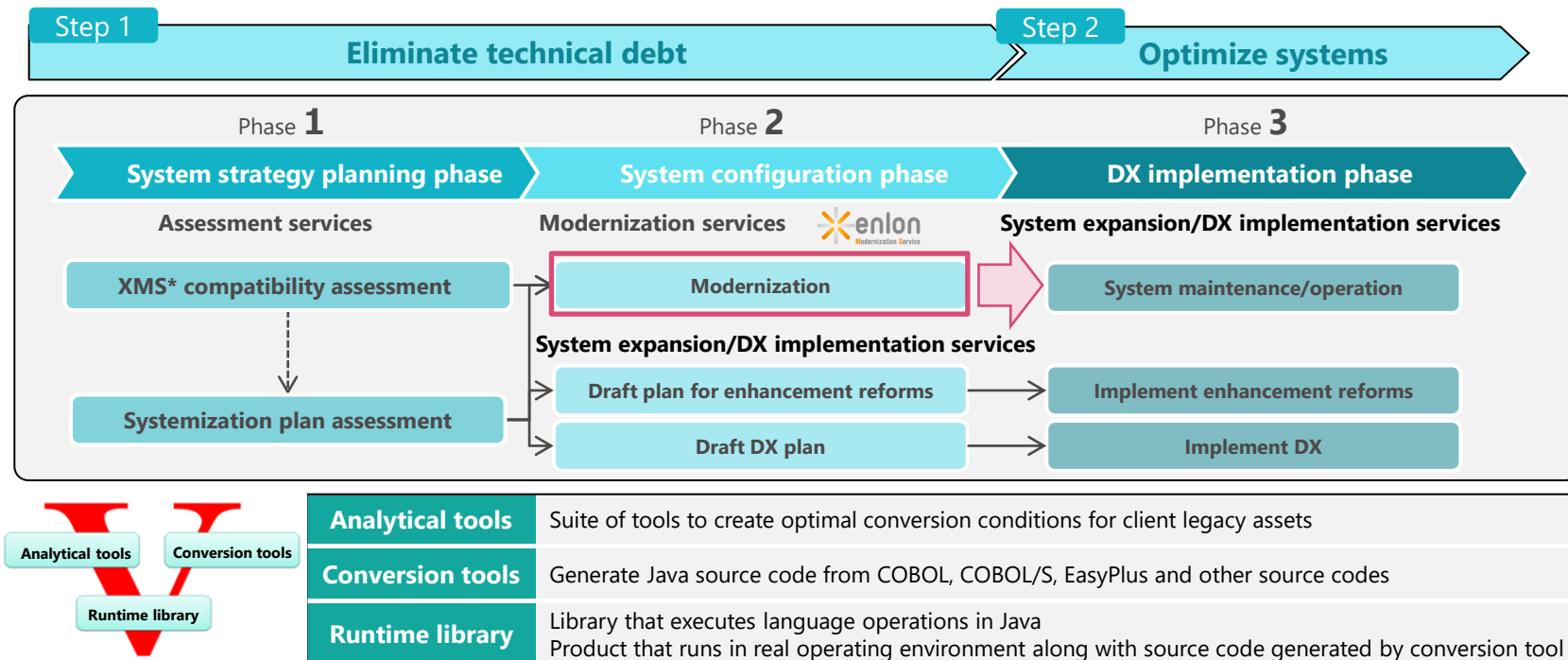
*Projects currently progress in 2024

2. Xenlon's track record and strengths

What is Xenlon?

- TIS' modernization services will be moving into two steps. Step 1 was split into two phases, with services offered in each phase. Xenlon Migrator, our own rewriting tool, is vital to Phase 2 modernization services and in combination with other tools, that is, analytical and conversion tools, will underpin modernization of clients' legacy assets.

General overview of TIS' modernization services and Xenlon Modernization Service

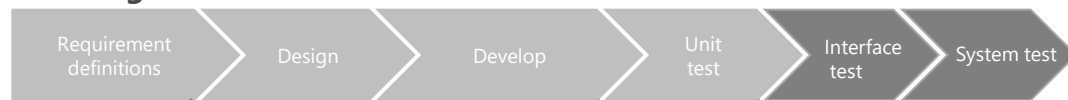


Xenlon Impact and Market Size

- Rebuilding requires that the person in charge has a good grasp of current operations and be closely involved in the project and the project itself moves forward in a waterfall style with documentation already in place (or in preparation). Also, system freeze periods tend to be longer, incurring significant cost.
- For the above reasons, many companies are shifting their focus from rebuilding to rewriting, and we see rewriting as a market with room for expansion.



Rebuilding



Rewriting



Minimize design space

Automate conversion with Xenlon

Compared with rebuild development...

Quality



High quality ensured!

Cost



Half the cost!

Duration



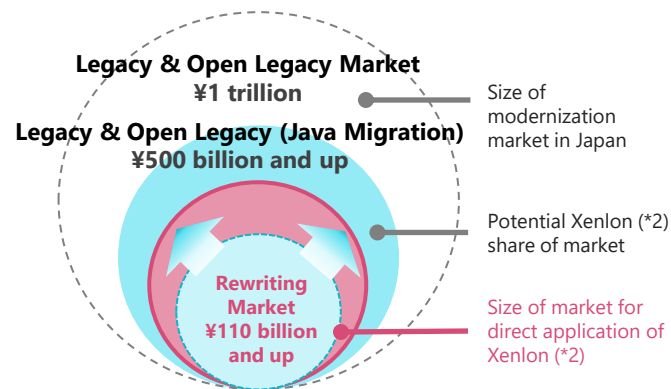
Project completed in half the time!

Risk



Minimized risk!

Size of Modernization Market in Fiscal 2024 (*1)



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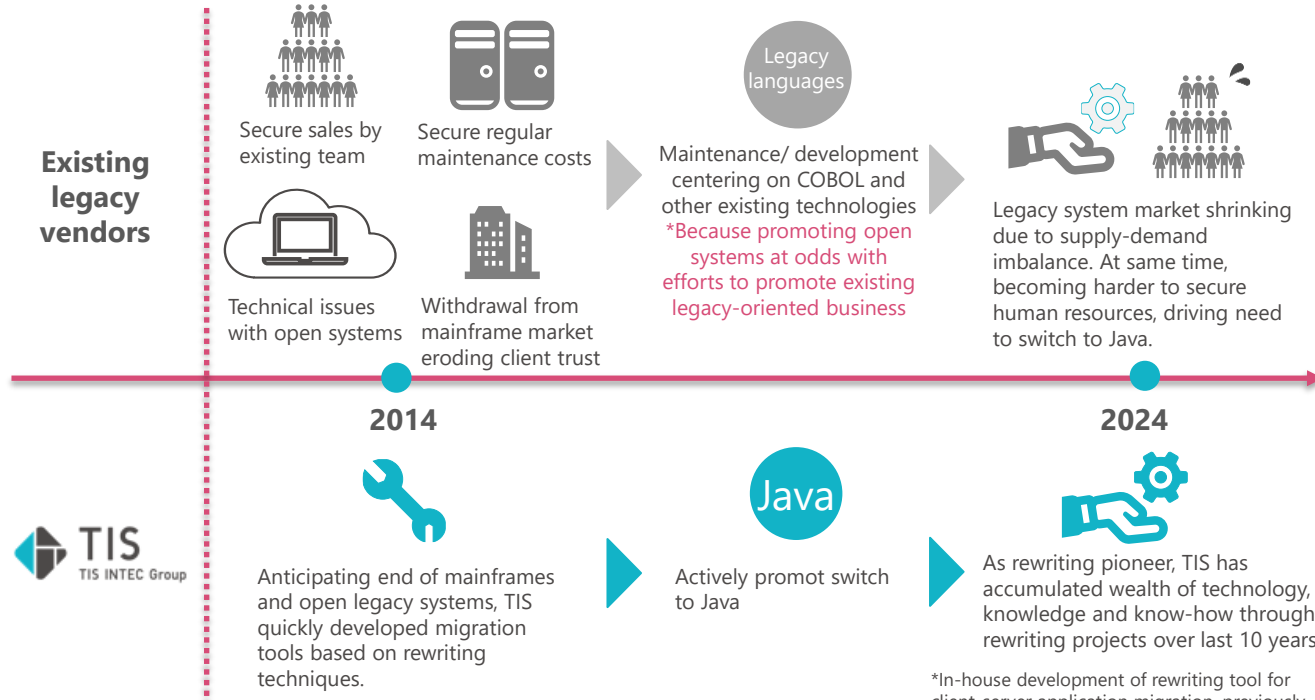
*2 TIS proprietary migrator (rewrite tool)



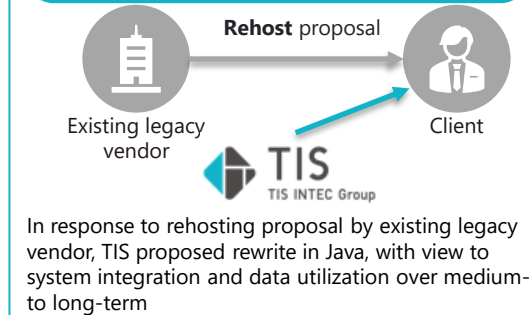
Highlighting impact of Xenlon

Initiatives and Strengths in Modernization Services Driven by Xenlon

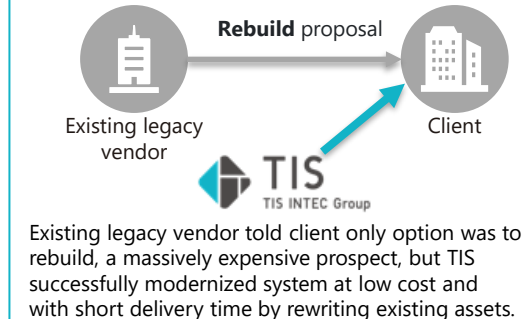
- TIS does not manufacture mainframes, UNIX servers or any kind of hardware. Therefore, take client perspective in actively pursuing research and investment into Java so as to ensure current program assets contribute to business over medium to long term. Believe experience and know-how accumulated so far differentiates TIS' solutions from rivals in industry.



Case study① Approach to rehosting proposals



Case study② Approach to rebuilding proposals



Xenlon Advantages

- Reason behind independent development of Xenlon was a lack of tools, even from overseas vendors, that satisfied client requirements and provided guaranteed performance. **Xenlon** was thus a response to an obvious need for a **tool that could ensure maintainability** of core systems over medium to long term following switch to Java (cutover).
- Xenlon goes beyond maintainability, however, bringing together **wealth of insights and know-how on** technical elements needed for open source development and **measures to address performance issues** that pop up when migrating from legacy systems. TIS aims to turn Xenlon into intellectual property.

Evaluation of tools from overseas and domestic peer companies at time of development



Tools created by overseas companies



Tools created by peer domestic companies

Evaluation

- Low conversion rate
- Post-conversion program assuming revision (low readability)

Demerits

- Quality cannot be guaranteed without extensive testing
- Black-boxing hinders improvements TIS wants to make

Pre-conversion example

```
XX XXX
XX XX-XXX
XX XXXXXX

XXX X(XX),
XXX X(XX).
```

What conversion looks like

TIS

```
public class XXnX xxxxxx XXxx {
<XX>
xxxxxx XXxx XX = XXxx(XX);
xxxxxx XXxx XX = XXxx(X);
xxxxxx XXxx XX = XXxx(X);
}
```

- Code is complete and simple!
- Supports highly versatile structure!

Company A

```
public class XXx xxxxxx XXXxxdXXXX {
xxxxxx xxxxx XXXxx xxx = xxx
XXXX(XXXX());.xxxx("XX");
xxxxxx xxxxx XXXxxdXXXX xX = xxx XXXxxdXXXX
(XXXX.X XXXxxdXXXX (XX.X. xxxxx)).xxxx("XX");
xxxxxx xxxxx XXXxxdXXXX xX = xxx XXXxxdXXXX
(XXXX.X XXXxxdXXXXdXXXX(X)).xxxx("XX");
xxxxxx xxxxx XXXxxdXXXX xX = ...
}
```

- Redundancy (200% higher than TIS' model)
- Dependent on tool-specific frameworks

Company B

```
public class XXXXXXX XXXxxdXXXX XXXxxdXXXX{
XXXXdXXXX xxx = xxx XXXxxdXXXX();
XXXXdXXXX xX = xxx XXXxxdXXXX().xxxx(XXXX);
XXXXdXXXX xX_xxx = xXx.XXXxxdXXXX(XXXX
XXXXdXXXX(X,X,XXXXdXXXX.XXXXX,
XXXXXXXXXXXX));
XXXXdXXXXdXXXXdXXXX = xXx.XXXxxdXXXX(XXXX XXXxxdXXXX(X));
XXXXdXXXXdXXXXdXXXX = ...
{XXXX.XXXxxdXXXX();}
```

- Redundancy (100% higher than TIS' model)
- Strong named entry and low readability

Xenlon was developed to showcase responsibility carried by TIS as Sler in modernization projects!

Xenlon Advantages

Point

Access to one-stop services

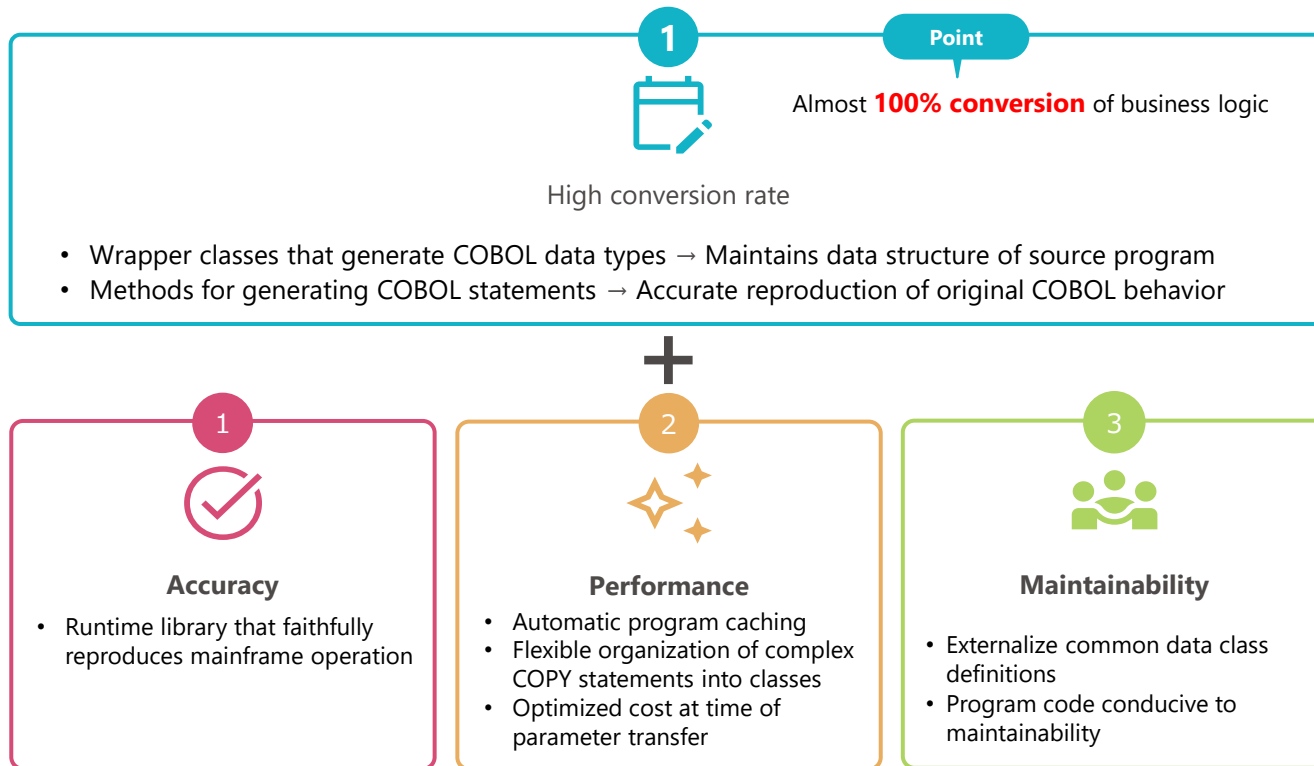
High maintainability

Fine-tuned performance response

Xenlon Advantages

- Xenlon is a high-performance migrator boasting a high conversion rate plus advantages of accuracy, performance and maintainability, and covers all key elements of a rewrite project.

Advantages



Xenlon Advantages

- Xenlon not only converts COBOL, a representative legacy language, but also supports other programming languages and presents advanced technical capabilities applicable to modernization of databases and peripheral systems including those for form- and file-processing. Patented for performance and maintainability, which are key challenges in migration projects, Xenlon distinguishes TIS from the competition.

Xenlon's extensive reach

Supports wide range of languages and processing methods!
Facilitates modernization in short period of time and at low cost!



Current	Migration challenges	New
Language (procedural) COBOL, PL/I, Easy, RPG, COBOL/S, IDL II, JCL	Differences in language specifications (data types, operations)	Language (object-oriented) Java
Database (Networks) IMS (IBM), AIM (Fujitsu)	Differences in data structures (network structure, table structure)	Database (Relational) DB2, Oracle, postgres, ...
Screen processing methods IPF, Message, ...	Support for web frameworks	Screen processing methods Nablarch, Spring...
Form processing method FORM (Fujitsu)	Differences in overlays and form definitions	Form processing method SVF
Hardware (OS) IBM, Fujitsu, Hitachi, NEC	Differences in job-control methods by manufacturer	Hardware (OS) Linux, windows

Patents showcasing technological power of Xenlon

Six patents held by TIS



No.	特許番号	タイトル	内容
1	特許602010008	プログラムの変換システム	業務処理の効率化とコスト削減を図るためのプログラムの変換システム
2	特許602010047	プログラムの変換システム、及びプログラムの変換方法	DBの最適化
3	特許602010048	プログラムの変換システム、業務プロセスの最適化システム、業務プロセスの最適化方法、プログラムの変換方法、プログラムの変換装置、業務プロセスの最適化装置、及び業務処理装置	Performance: 4 業務プロセスの最適化とプログラムの変換を同時に行うことで、業務プロセスの最適化とプログラムの変換の効率化を図る。また、プログラムの変換の効率化を図る。
4	特許602010088	プログラムの変換システム	DBの最適化とプログラムの変換を同時に行うことで、業務プロセスの最適化とプログラムの変換の効率化を図る。また、プログラムの変換の効率化を図る。
5	特許602010089	プログラムの変換システム	DBの最適化とプログラムの変換を同時に行うことで、業務プロセスの最適化とプログラムの変換の効率化を図る。また、プログラムの変換の効率化を図る。
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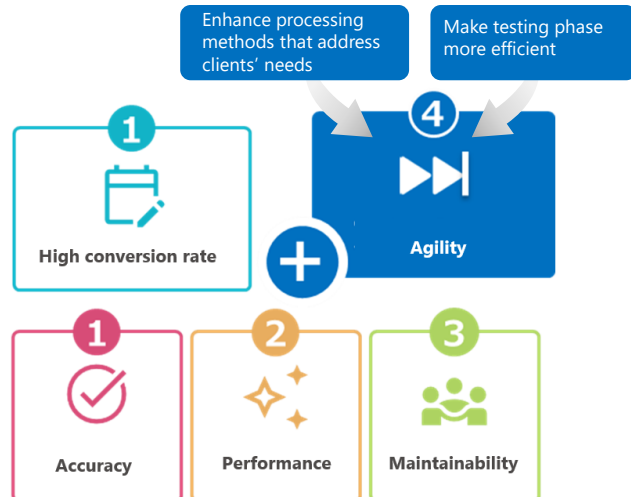
Improved maintainability: 2

Further Evolution of Xenlon

- Will leverage Xenlon's advanced technology and competitive advantages in modernization market to support clients in their efforts to shift away from legacy systems and build and operate systems that will contribute to medium- to long-term business growth. In addition, seeking further evolution of services, TIS remains committed to upfront investment and further evolution of Xenlon by augmenting high conversion rate (Advantage 1) with agility (Advantage 4).

Realize new added value

We will continue to invest in R&D and human resources to enhance processing methods that address clients' needs and make the testing phase more efficient, thereby augmenting Xenlon with the strength of agility.



Summary of Xenlon initiatives

Past Efforts



Developed Xenlon conscious of post-Java maintenance



Acquired high-level technical expertise and knowledge as rewriting pioneer



Patented six technologies that underpin performance/maintainability

Future Goal

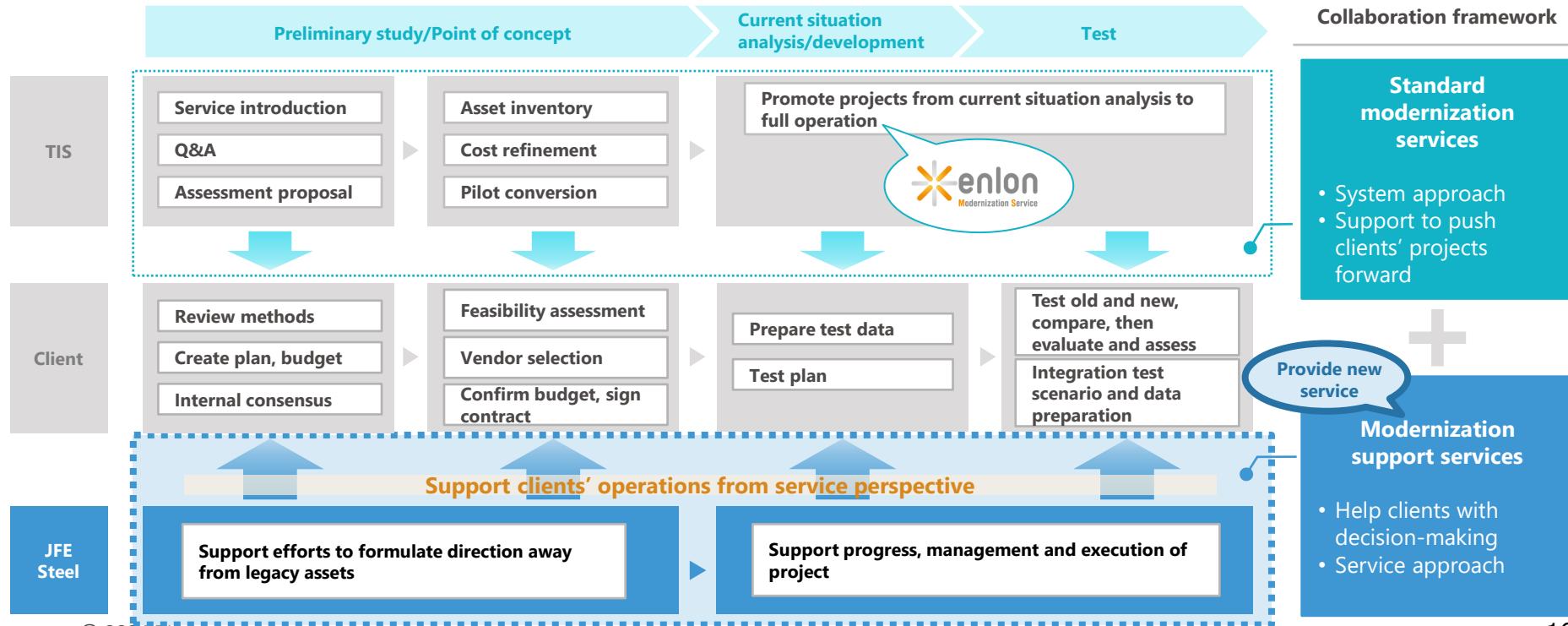


Realize new added value (agility)

3. Efforts to further expand business activities

Moving toward Further Business Expansion (Industrial IT)

- Previously, TIS' modernization services centered on IT promotion (system approach) and support to push clients' projects forward. But to provide support delving deeper into clients' business domains and thereby expand their business activities, TIS teamed up with JFE Steel Corporation, which has built proven track record in modernization, for improved value provided to clients.



Moving toward Further Business Expansion (Financial IT)

- To help clients address current legacy asset status and associated issues, TIS will continue to expand modernization menu, with Xenlon at core. Enhancing existing Modernization Services for assembler and implementing Pega Infinity™ as Pega partner, TIS will broaden scope of solutions to meet diverse client needs.



Pega Infinity

Low-code development tool that provides advanced BPM functions and supports automation and management of business processes. Includes wide range of APIs and facilitates seamless connection to external systems

Background to lineup expansion

Diversifying market/client needs and irregular/sudden product updates has led multiple major financial institutions to rebuild front-end systems with low-code tools instead of opening architecture.

Aim in expanding lineup

Facilitates modernization to highly mobile and robust core system through rebuild of back end using Xenlon, which ensures safety and stability of legacy assets, and highly flexible and agile front end using BPM.

Modernization Services for assembler

A TIS original solution, this menu supports modernization of assembler assets, enabling clients to eliminate black-boxing of program assets and convert languages

Background to lineup expansion

Many cases where current programs hinge on COBOL and PL/I, but also many cases where assembler assets remain and are incorporated, which hinders modernization process. In addition, cannot identify status of specifications for most.

Aim in expanding lineup

By reinforcing lineup with Modernization Services for assembler, which is outside scope of Xenlon, TIS can offer comprehensive modernization proposals and one-stop solutions to clients with assembler assets.

Client perception of next-gen architecture

BI tool Service app CRM SFA



Financial modernization lineup



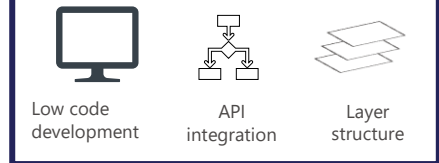
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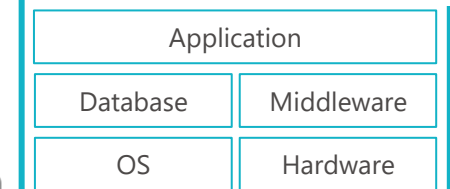
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Front end



Back end



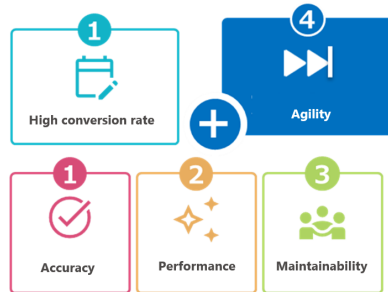
Working toward Business Goals

- Capitalizing on market trends and utilizing advantages inherent in Xenlon, TIS will propose and introduce solutions to clients who fit SPB strategy criteria, aiming for net sales of around ¥100 billion to ¥130 billion in medium to long term. Will also build up order backlog by securing long-term projects and promoting shift from ordinary client connection to SPB following solution implementation, a process that will require efforts to reinforce strengths, including inventory of intellectual property.

Improving advantages



Advantages: From 1+3 to stronger 1+4



Financial

Industrial

Expand modernization menu, strengthen lineup through partnerships



Expanded menu



Partnerships



Enhanced quality

Desired business scale

Financial IT
Industrial IT

CAGR above 20%

Medium- to long-term target for business
¥100 to ¥130 billion

Aggregate net sales over three years
¥20 billion

¥4.8 billion

Fiscal 2024

Fiscal 2025

Fiscal 2026

Fiscal 2027

Fiscal 2033

Securing future stock business*

*Business generating recurring revenue

Turn into strategic partnership business (SPB)

SPB: Business that considers and promotes strategies to industry top class as partner and supports' core operations

Client approach

	Mission critical	Peripheral	Front end	New
Maintenance/operation	Support to maintain (system maintenance) and operate (system improvement) will be provided after upgrade			
Service APL				
Middleware	Initial scope of modernization			
Hardware				

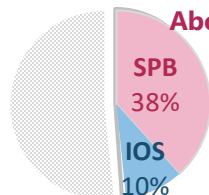
Build lasting relationship by using mission critical innovation as hook

Toward Sustainable Corporate Growth

- To achieve Group Vision 2032, announced in May 2024, we defined unique areas of business activity as strategic domains that will underpin sustainable growth.

Modernization services are not one-off pursuit but rather a business category that will lead to **creation and expansion of SPB**, a core activity of Financial IT Business and Industrial IT Business, and fuel **sustainable business growth of TIS INTEC Group**

Net sales:
About ¥200 billion



Strategic domain ratio: 48%

Fiscal 2024

Fiscal 2027

Medium-Term Management Plan (2024–2026)

Frontiers 2026

We will set **frontier development** as a fundamental strategy and strive for **sustainable growth paralleling higher added value**. We will strive to achieve **changes in society and for corporate clients** by **enhancing quality across all value chains**, starting with **forward-looking market development** and **business domain expansion**.

Strategic domain ratio

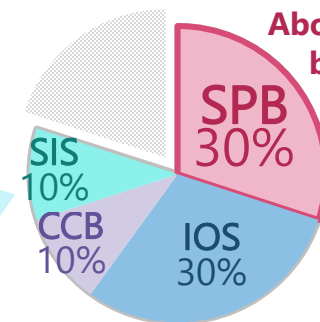
80%

Fiscal 2033

Group
VISION 2032

Society oriented, operationally diverse, globally active

Net sales:
About ¥300 billion



Strategic Domains

Social Innovation Service (SIS)

Co-Creation Business (CCB)

IT & Business Offering Service (IOS)

Strategic Partnership Business (SPB)



Make society's wishes come true through IT.



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