EVOLVEWARE

GUIDE

Plan and Implement Application Modernization Initiatives to Achieve Success

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Introduction

Over the years, application modernization initiatives have become urgent on a larger scale. As systems become increasingly expensive to maintain or support and business capabilities may no longer serve key revenue and growth needs, organizations are quickly realizing they can no longer push off transformation efforts.

However, once that realization is made, it can be daunting to figure out where to start and how to approach application modernization with the right strategy and implementation processes to achieve success and not succumb to budget overruns and project failures.

*At EvolveWare, we believe the **path to success** requires a **phased approach** with **intermediate steps and deliverables** to gauge what final delivery can look like.*

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Overview of the eBook

This eBook will:

1. Introduce the phased approach to application modernization
2. Dive deep into each step of the approach to outline decision considerations
3. Demonstrate how EvolveWare and the AI-augmented Intellisys platform can be used within the framework of this approach to meet various application modernization goals

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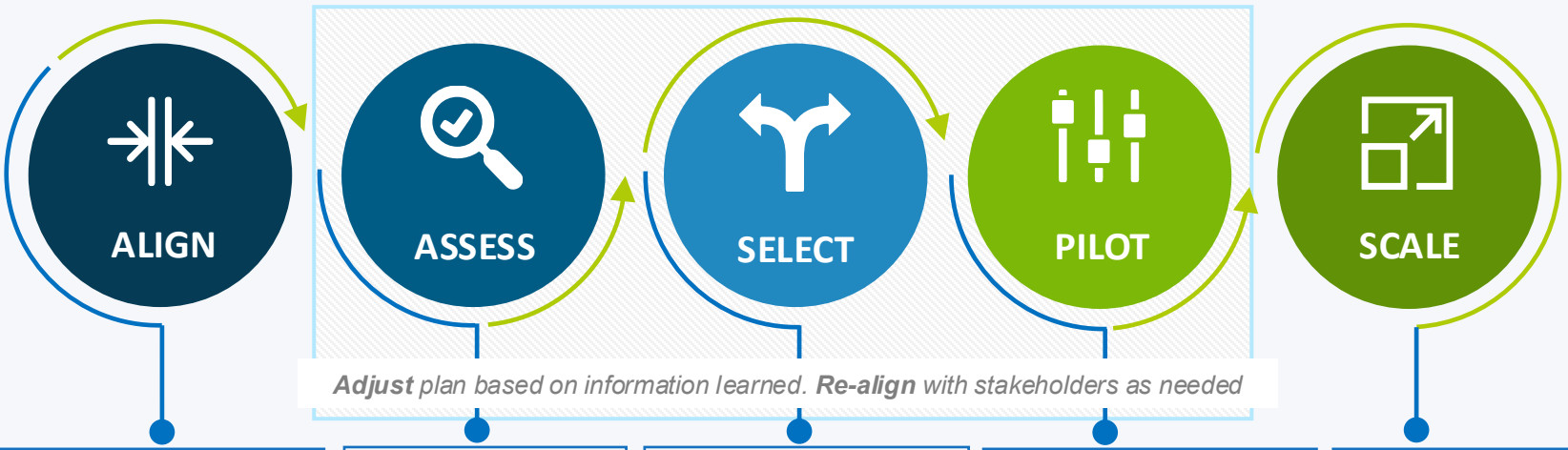
Phased Approach to Application Modernization



ALIGN on Goals & Constraints

What are the goals?
- Business transformation
- Technology transformation

What are the constraints?
- Resourcing
- Budgets
- Timelines

ASSESS Application(s)

For each application, assess:
- Current state
- "To be" or future candidate requirements
- Costing options to migrate or transform technology

SELECT Path(s) to Modernization

For all relevant applications, determine where and when to:
- Extract, audit, & categorize the current policies (rules) & algorithms being run
- Optimize algorithms/code
- Transform rules/algorithms to target platforms & technologies

Start Small & run a PILOT

Structure pilot project based on:
- Code that is representative of full application
- Processes needed to achieve target state
- Intermediate deliverables to validate the approach

SCALE

- Scale once good processes and a path to success have been determined

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ALIGN

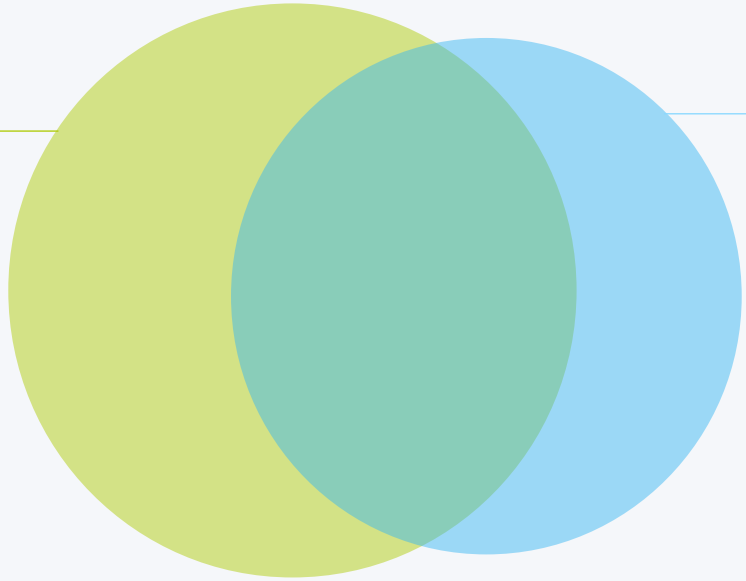
ALIGN on Goals and Constraints

IT teams and business stakeholders must work together to determine the goals for modernizing applications. They must also check in on organizational constraints and how that may factor into defining goals and preparing for modernization.

Why is your organization interested in application modernization?

Business Transformation

- **Change in business/ environmental conditions**: Current applications can't keep up
- **Innovation**: Newer technologies allow businesses to try new things and redefine experiences



Technology Transformation

- **Excessive costs**: Legacy application operation, maintenance, and updates can become expensive both from a money and time perspective
- **Skills shortage**: The availability of personnel with the appropriate skills is getting rarer
- **Security risks:** Legacy applications were not built for the types of cyberattacks that occur today

** Resourcing, budgets, and timeline constraints may affect the transformation types chosen*

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ASSESS Application(s) - Inventory

Based on the goals and scope defined in the align phase, compile the inventory of applications that need to be reviewed to determine the best path forward. For each of these applications:

- Conduct a thorough assessment of the current state
- Compare these to the future functional and technological requirements
- Determine transformation options
- Adjust the plan and re-align with stakeholders as needed.

What should be included in the assessment?

Current State	Functional Requirements	Technological Requirements
Source application metadata including logistics, areas of optimization, dependencies, etc.	Updated policies and improved processes	Programming language
Legacy application architecture	Algorithms needed	Infrastructure and associated architecture
Data model, access details, and variable/constant usage	System interfaces needed	3rd party tools and platforms

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ASSESS Application(s) - Inventory

The Intellisys platform helps organizations assess the current state of their applications with **90% less time and effort*.** The platform uses its **unique AI/ML technology** to automatically extract metadata from applications written in **20+ languages**.

This metadata is then used to create various assessment & documentation artifacts simply by having a user select a few parameters – **the platform does the rest**. Intellisys features and benefits include:

FEATURES	BENEFITS
A set of "drill down" diagrams of the application showing both internal and external dependencies	Allows the application to be divided into multiple modules as needed so it can be modernized using a phased approach. This mitigates risk substantially.
Renders logic at the paragraph/method level in formats and a language that can be understood both by technical and business analysts	Enables detailed understanding of the application by multiple stakeholders including programmers that may not be experts in the language the application was written in.
Extracts downloadable data model and entity-attributes relationship diagram	Allows the source database schema to be normalized for the target modern application by a third party ETL tool.
Dead and redundant code reports	Optimizes target application by deactivating dead code and converting redundant code into callable functions. Results in enhanced performance and allows removal of potential security vulnerabilities.
Objective complexity report, calculating complexity from the system level down to the individual routines	Enables identification of code that may contain business critical rules. If converting to modern code, highly complex code can be split/re-written to make the target application more maintainable and scalable.
Variable and constant usage reports	Helps identify code that may contain critical business rules by allowing tracing of code using frequently used variables and constants.

**As compared to manual processes*

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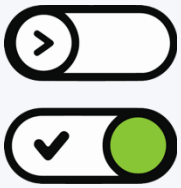
ASSESS

ASSESS Application(s) - Analysis

Intellisys also provides robust analysis features that allow you to:

Deactivate or update embedded business logic referring to policies that may be outdated



Decide on how to re-architect a modern version of the application during transformation

Determine how and where to optimize the application source code prior to embarking on a modernization path

Determine costing options to migrate or transform the technology to modern platforms.

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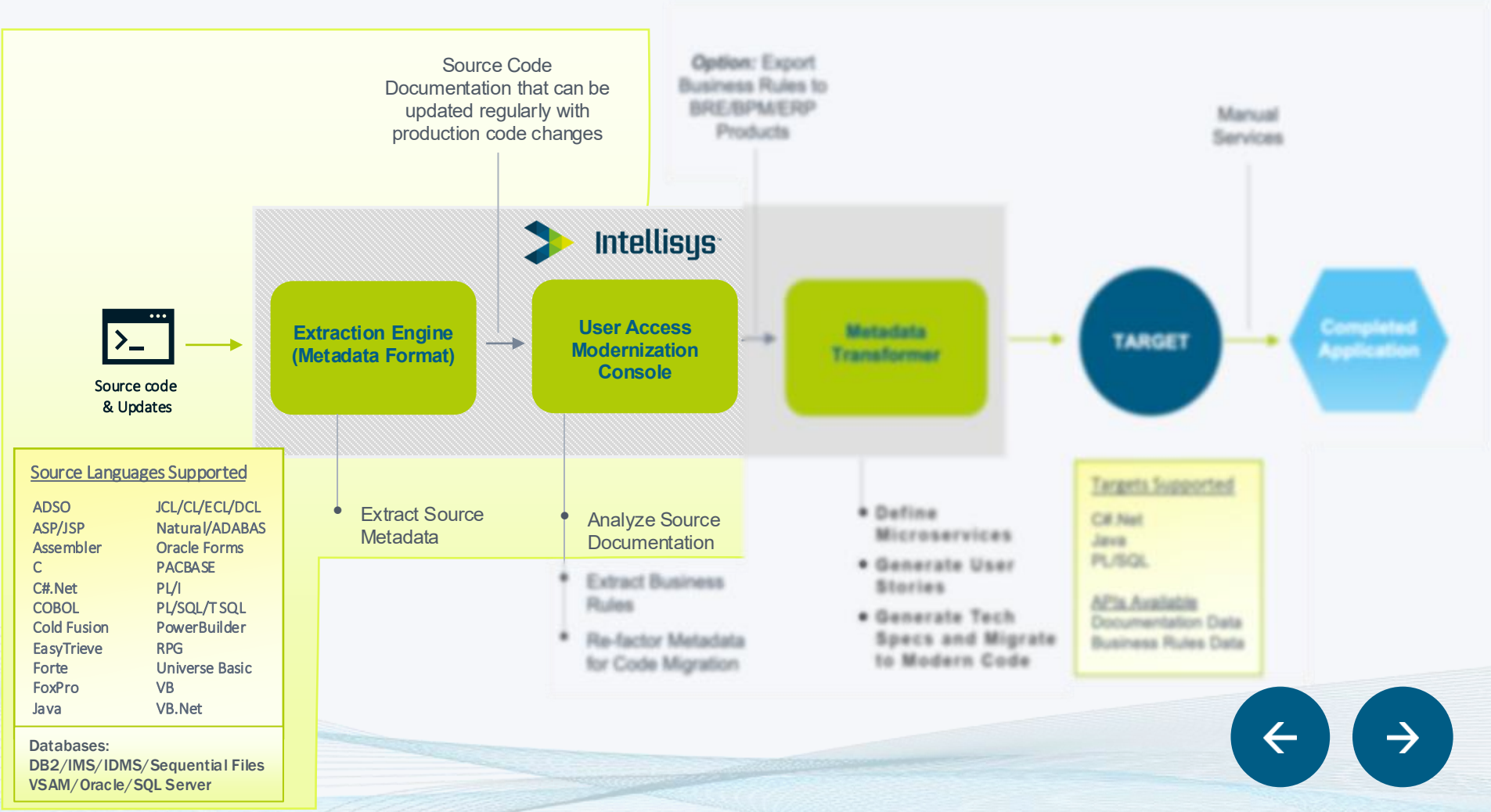
Intellisys Platform – Documentation & Analysis



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SELECT

SELECT Path(s) to Modernization

Based on your transformation goals, there are several modernization approaches you can choose from.

Optimize & Migrate

Optimize code/architecture for new technology without making business rule updates.

Can include moving to the cloud and/or new hardware and/or modern coding frameworks

Migrate As-Is

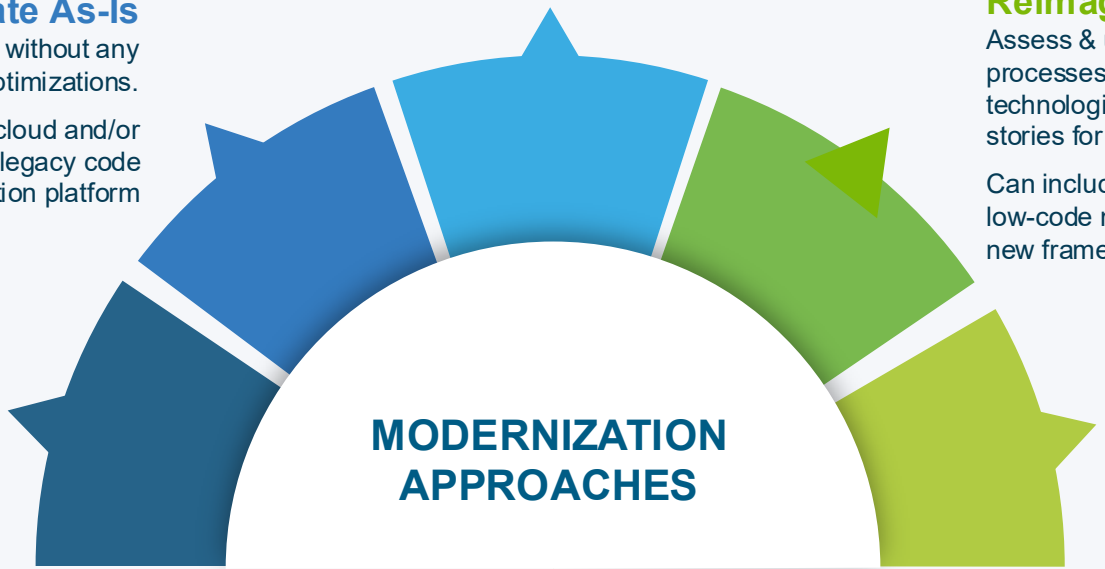
Migrate to new technology without any code/rule/architecture optimizations.

Can include moving to the cloud and/or new hardware and/or a legacy code emulation platform

Reimagine & Redesign

Assess & update business rules and processes. Transform rules to new technologies as needed. Generate user stories for a rewrite

Can include moving to open or low-code no-code platforms and/or new frameworks and/or COTS



Retain

Keep as is

Retire

Discontinue use of

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SELECT Path(s) to Modernization

Retain - No transformation needed

Modernization Approaches	Transformation Type	When to Use	Path to Take
Retain *(Keep as is)*	**No transformation**	Application that is: • Not critical • Has limited usage • No changes in business processes • Few dependencies • Finite life • Currently supported on modern technology	Document for future longevity, extensibility, and maintenance

EvolveWare & **Intellisys** can help with the platform's *Documentation & Analysis* capabilities.

These include:

- Tracing code flow, variable flows, and data structures for batch applications
- Identifying duplicate code and processes
- Enabling entity, logic and free text and block pattern search.

To learn more, review our eBook: *Understanding Your Applications: The Foundation for Application Modernization*

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SELECT Path(s) to Modernization

Migrate As-Is and Optimize & Migrate – Technology Transformation

Modernization Approaches	Transformation Type	When to Use	Path to Take
Migrate As-Is *(Do not optimize code/ architecture)* **Optimize & Migrate** (*Optimize code/architecture*)	• **Technology Transformation** • **Can be part of a Business Transformation**	Application: • Requires only minimal changes to application logic • Benefits from moving to modern technologies such as cost efficiencies, ability to integrate systems, and/or reduction of vulnerabilities	Algorithm/code optimization & migration

EvolveWare & **Intellisys** can help with the platform's *Code Optimization & Migration* capabilities.

These include:

- Optimizing source code through deactivation of dead code, renaming of variables and constants, merging or splitting logic etc
- Generating technical specs and using them to migrate code to a modern language like Java in modern architectures with an AI enhanced process

To learn more, review our eBook: *Technology Transformation Using Code Optimization and Migration*

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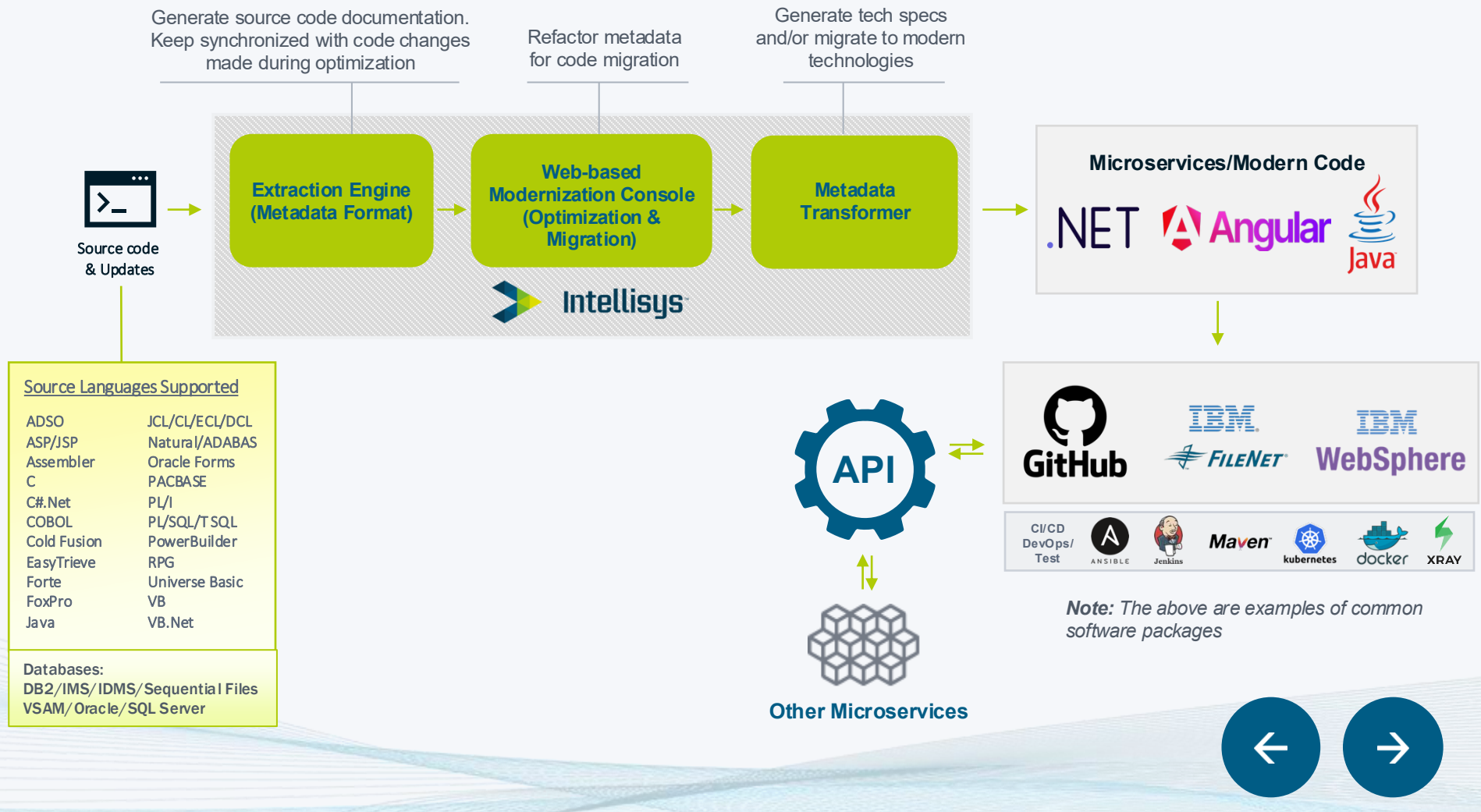
Intellisys Platform – Technology Transformation



Note: *The above are examples of common software packages*

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SELECT Path(s) to Modernization

Reimagine & Redesign and Retire – Business Transformation

Modernization Approaches	Transformation Type	When to Use	Path to Take
Reimagine & Redesign *(Assess & update rules and processes. Transform to new technologies)*	**Business Transformation**	Application or set of applications: • Requires significant policy and technology changes to meet business goals moving forward • May have duplicate functionality with other applications	Business rules extraction, audit, and transformation Generation of user stories
Retire *(Discontinue use of)*			

EvolveWare & **Intellisys** can help with the platform's *Agile Business Rules Extraction* capabilities.

These include:

- Providing services to capture target business outcomes into a Domain Driven Design model
- Consolidating logic into rules using AI & automation features and organizing them into high level policies
- Enabling rationalization of systems by identifying duplicate rules
- Enabling the export of rules to third party tools or transformation of rules to modern code and architectures
- Facilitating a rewrite through the generation of user stories

To learn more, see our eBook: *Business Transformation using Agile Business Rules Extraction*

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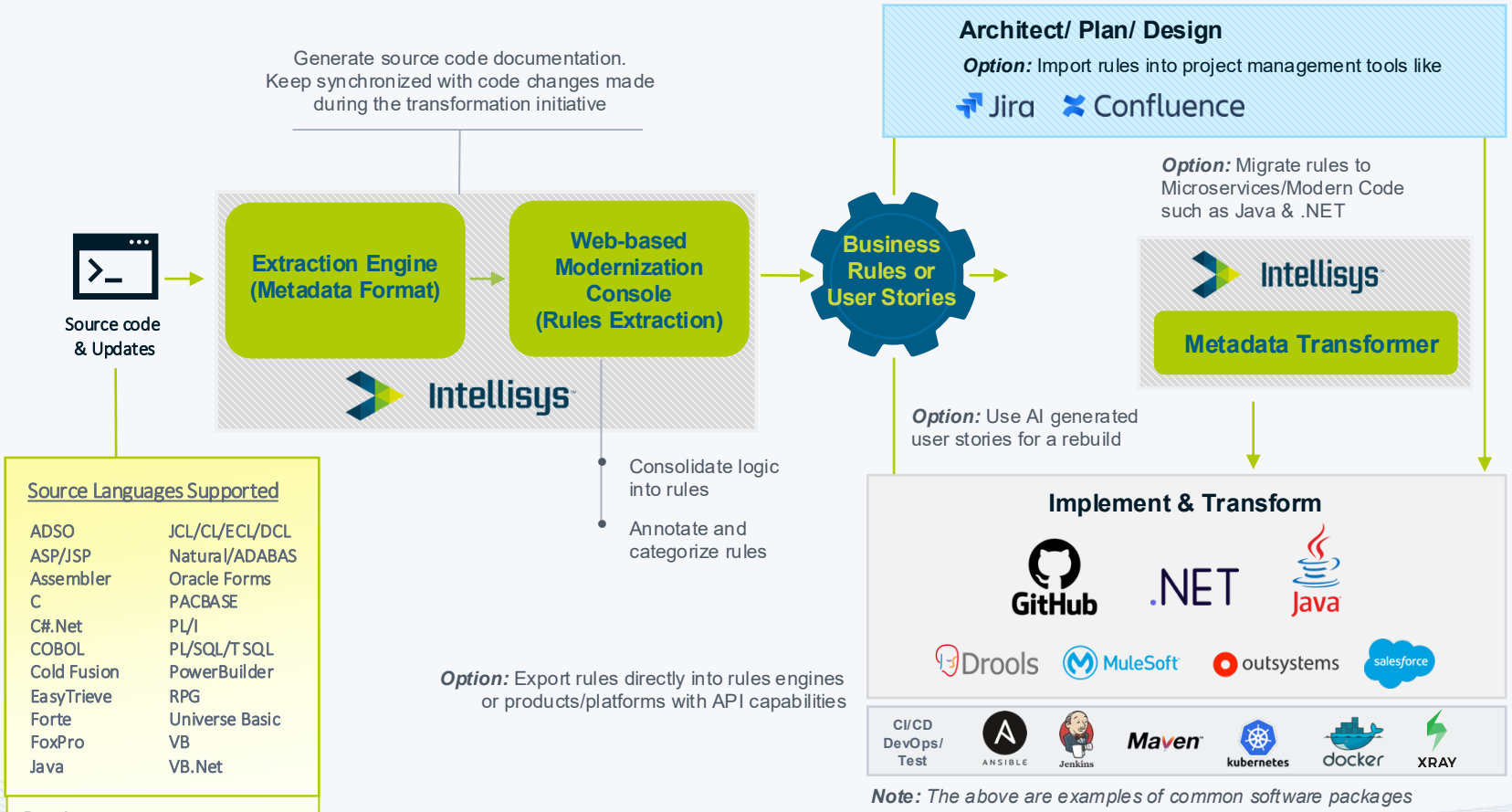
Intellisys Platform – Business Transformation



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PILOT

Start Small & Run a PILOT

Once you've selected a path or multiple paths to modernization, it's then important to design one or more pilot projects to test and validate the resources and processes that have been selected for each application. This should be done using the following steps:

IDENTIFY PATH OR PATHS TO MODERNIZATION and the parameters that must be met to transform the source to the selected target.

i.e. for a rules extraction project determine in conjunction with the business stakeholders how they'd like to see the rules "carried over" or "improved" as part of the transformation

SELECT CODE TO RUN THE PILOT ON that is sufficient to test the technology, resources, and processes identified for the path(s) to modernization.

Can be the most complex piece of the application.

- For rules extraction, end result could be successful consumption of rules by a third party tool or implemented by development team in a modern language.
- For optimization & migration, should be an executable min viable application that can be tested and deployed in an environment similar to the target

IDENTIFY INTERMEDIATE DELIVERABLES that can help validate results as part of the process.

DETERMINE A SCHEDULE FOR COMPLETION for each phase of the pilot and execute. Document the finalized processes once successful.

You will likely modify processes and expectations along the way. Factor in additional time of 30-40% when finalizing your schedule

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Start Small & Run a PILOT

EvolveWare can help your organization use the information gained in the previous 3 steps to structure a pilot project. The Intellisys platform can be used in conjunction with other parts of your development environment to run the pilot and ensure that the outputs you need to meet your goals are being generated.

PILOT CASE STUDY:

A large state agency needed to extract business rules from a multimillion-line application. The target application state had been identified, and the template and format in which the rules were required had also been determined.

The state decided to identify the resources and processes for rules extraction, and thereafter to conduct a pilot on a module of the application. This module was further divided into smaller code segments.

The Intellisys platform was selected based on analyst recommendations and a detailed comparison of features versus other products available on the market. A pilot was initiated. During the process, some new features were also identified that EvolveWare then integrated into Intellisys, helping this and future clients with similar use cases to achieve their goals more efficiently and effectively.

Upon completion of the platform customization, an end-to-end rules extraction effort was performed on the pilot module with finalized documented processes that resulted in rules being generated in the format required. Approximately one hundred rules were successfully curated into English readable format and migrated or transformed into the new system.

Pilot length: 4+ months

- intermediate results were reviewed
- custom modifications to the platform were noted
- some processes were changed to generate efficiencies

Results: approx. one hundred rules successfully migrated into the new system

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Scale

Upon completion of a successful pilot or pilots, scale the initiative to achieve your transformation goals.

PILOT CASE STUDY:

Based off the success of the Pilot, the Client then went ahead and successfully curated thousands of business rules to then be integrated into the transformed system.

See the full case study here

Project Results:

- **Successfully documented and curated tens of thousands of business rules** from 31 million lines of code in 3 years
- **Achieved estimated resource efficiencies of around 3X** derived during documentation and rules extraction efforts
- **Created a multi-user, web enabled, business rules repository**, providing complete traceability
- **Provided a thorough documented "trail" of rules** that allowed identification of duplicate rules across systems
- **Generated inputs that the State used to develop a roadmap** for the future system.

Contact us

Would you like to see how Evolveware can help you along your application modernization journey?

Email us at contact@evolveware.com

EVOLVEWARE

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About us

EvolveWare has been dedicated to providing enterprises, partners, and government organizations with a seamless application modernization journey since 2001. Its industry-leading Intellisys™ platform is the only solution that automates the core processes involved in maintaining and modernizing applications written in 20+ programming languages. Incorporating a unique, patented technology, this AI-augmented platform mitigates risk with a phased approach and delivers a truly agile modernization experience. EvolveWare is proud to have strategic partnerships with Deloitte and KPMG amongst others, and to have delivered successful results in record time for customers such as BMI, the State of New York, and the U.S. Department of Defense. Headquartered in Silicon Valley, CA, EvolveWare's global team is committed to continuous innovation, outstanding client services, and support. For more information, visit http://www.evolveware.com/.

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