

Decision-Making Factors when Moving to SAP NetWeaver Process Integration 7.1 or 7.1 EHP 1 - Upgrade or New Installation with Phase Out

Applicable Releases:

SAP NetWeaver Process Integration 7.1 (including EHP 1)

SAP NetWeaver 7.0 (2004s)

SAP NetWeaver '04

Topic Area:

SOA Middleware

Capability:

Service Bus

Version 1.2

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Document History

Document Version	Description
1.2	Including updates for EHP 1
1.1	Modified: Type of High-Volume Interfaces (page 15) Factor rating calculation (page 22)
1.0	First official release of this guide

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Scenario

You are running a productive SAP Exchange Infrastructure system (XI 3.0 or PI 7.0) in your system landscape and you want to know your options to come to an SAP NetWeaver Process Integration 7.1 (PI 7.1 or PI 7.1, enhancement package 1 (EHP 1)) system.

The reasons to move to PI 7.1 or PI 7.1, EHP 1 have already been settled in your company, and as a project manager you would like to get an overview of the possibilities of how you can achieve the transfer most effectively.

This guide explains the two available options to get to a productive PI 7.1 or 7.1, EHP 1:

- Upgrade of your existing productive system or
- New Installation with phaseout of the old system.

This guide explains decision-making factors and background information for rating your environment with regards to product-related decision factors. It provides you with insights into making a decision and assistance on which approach you should target in your customer-specific environment to come from a productive XI 3.0/PI 7.0 landscape to a PI 7.1 or PI 7.1, EHP 1 landscape.

This guide does not explain the details of the technical upgrade itself; for this type of information you see the available documentation on SAP Service Marketplace at:

<http://service.sap.com/instguidesNWPI71> → *Upgrade*. This link points to all the information required for PI 7.1 including EHP 1.

2. Prerequisites

We assume that you are running a productive XI 3.0/PI 7.0 system in your environment and that you have connected various business systems running various types of interface scenarios between those systems.

If you are not yet live with any previous product, we assume that you can manage to bring your current project phase onto PI 7.1 or PI 7.1, EHP 1 with upgrades of your existing project XI/PI landscape (development and quality assurance systems) and that you would then go live with a newly-installed PI 7.1 EHP 1 production system.

Furthermore, we assume that you and your project team are familiar with the connected business systems and the scenario types and that you can answer background questions about your existing productive XI/PI environment.

- For a project to be successful, SAP recommends that you either are already in or get into an initial evaluation phase to get familiar with the new features and functions of SAP NetWeaver PI 7.1 (including EHP 1) before you start with the project itself. Based on your PI 7.1 or PI 7.1, EHP 1 experiences, you should be able to judge for your project team how much additional training your XI/PI developers and operation teams need beforehand.

3. Overview of Possibilities

In this unit we briefly explain two possibilities to get from a productive XI 3.0/PI 7.0 system landscape to a PI 7.1/PI 7.1, EHP 1 landscape. First, we introduce the upgrade procedure including the "to-be-executed" project steps from an implementation project perspective. The second option to install a new PI 7.1 (including EHP 1) system in parallel to your existing XI 3.0/PI 7.0 landscape, including the phaseout of the old productive systems, is explained in 3.2.

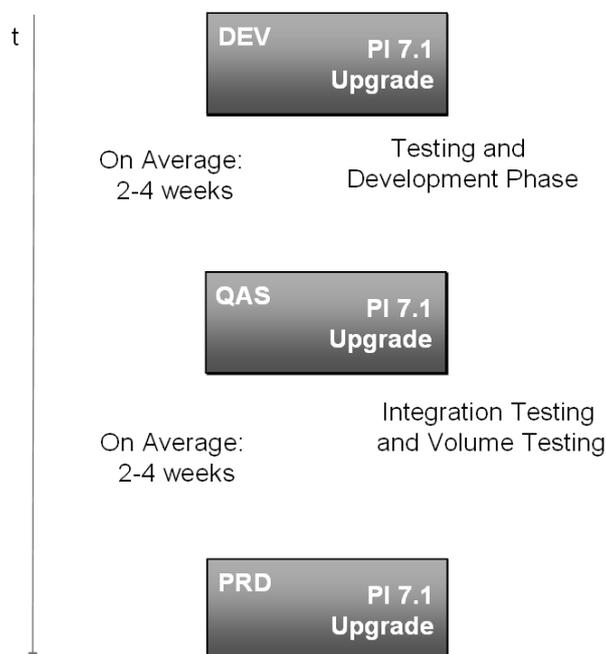
Note

Note that all diagrams below which mention PI 7.1 also hold good for the PI 7.1 EHP 1 release.

Upgrade paths to PI 7.1 (including EHP 1) are supported from both source releases, SAP NetWeaver 2004 (XI 3.0) and SAP NetWeaver 7.0 (PI 7.0). Your existing investments are leveraged by the upgrade, which means that all of the objects stored in XI 3.0 or PI 7.0 will be available after an upgrade to either SAP NetWeaver PI 7.1 or to PI 7.1, EHP 1.

However, any necessary adjustments that you would have to perform during upgrade are published and described in PI 7.1 or PI 7.1, EHP 1 release notes with respective upgrade documentation. You would need to take these changes into account when planning the upgrade project.

For your typical three system landscape (consisting of development system, quality assurance system and productive system) it is recommended that you upgrade all systems in a timely manner, meaning the upgrade project has to consider the time interval from development system upgrade to productive system upgrade together.

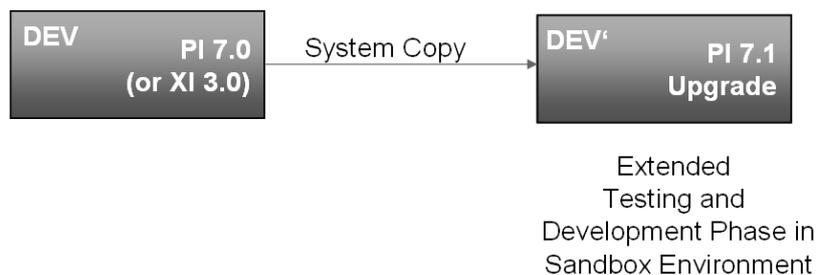


The development system upgrade usually takes place at the very beginning and is required to prepare necessary customer development for PI 7.1 (including EHP 1).

On average, the technical upgrade itself should take approximately 1-2 days (not including the required preparation phase) and the upgraded development system will be used to check the running

interfaces, make adjustments to customer modifications (such as, adapter modules, Java functions in the mappings, and so on). The upgrade duration can vary depending on the used hardware, the maintenance status of your underlying DB system, and other factors. Therefore, the expected duration has to be determined for your environment individually and might have to be optimized on the process way up to your final upgrade of your productive system accordingly.

If you have developed quite a lot of customer add-on functionality, such as own adapter modules, own mapping functions, and own adapters, or you are using third-party developments including adapters and other content, we recommend separating the „getting familiar with the new PI 7.1 or PI 7.1, EHP 1“ and development adjustment phase from your overall upgrade project.



In this case it would be better if you were to create a new PI 7.1 or PI 7.1, EHP 1 development system by using the system copy functionality of your existing development system and running an upgrade on this system first. This allows you to familiarize yourself with the technical upgrade process under limited time pressure and still keeps a development system for your existing productive landscape. Take your time to become acquainted with PI 7.1/ PI 7.1, EHP 1. Use the preliminary phase to get your PI development and operations team up-to-speed with PI 7.1(including EHP 1), for example, by developing completely new Software Component Versions and interfaces that require, or are best suited to, testing of the new features and functions of the PI 7.1 or EHP 1 system. Also take time to check the correctness of existing interfaces and, if required, adjust the existing customer developments.

In this case, the developments on the old XI 3.0/PI 7.0 code line should be limited to emergency corrections only. These emergency corrections have to be applied on both development systems (DEV and DEV') to keep the developments synchronized.

If the amount of customer development is limited and can easily be revisited by your PI developers, this additional step with the get familiar phase and a second parallel development system on PI 7.1(including EHP 1) is not required.

After the testing and development phase in your development infrastructure, the quality assurance system has to be upgraded next. The focus on your QA system will switch to test the connectivity and integration with your connected systems to PI 7.1 or PI 7.1, EHP 1. We assume that you have setup connections in your QA landscape to other connected QA systems to prove intersystem communications. The time here should also be used to execute volume testing, to optimize your interfaces and system configuration, and to gain experience with the new PI 7.1 or 7.1, EHP 1 functions offered.

Finally, after successful integration testing, you will upgrade your productive PI system to PI 7.1 or to PI 7.1, EHP 1- which requires well-planned downtime for your productive system.

Before you schedule and execute the upgrade in your productive system, it is recommended that you reduce the message volume of your productive system on the Integration Server and Adapter Framework. Take this opportunity to clean up your messages and get rid of any with error status. You should also assess in advance whether it is acceptable for your business to reduce the retention time of messages processed successfully to a minimum, as the configured retention period is only valid for

newly-created messages. The intention behind this is really to reduce the number of messages in your PI system during the upgrade procedure to a minimum. After the successful upgrade, you can increase the retention time to keep messages in the PI system to fulfill your business requirements for longer monitoring capabilities.

Additionally, as a kind of risk mitigation, you have to execute a test-run of the technical upgrade on a system copy of your productive system. This test-run will help your IT department to get trained for the productive system downtime period, as well as providing you with an indicator of how long the planned downtime will take based on your productive data.

3.1.1 Summary of Activities for Upgrade

- Migrate operating system to 64Bit (if necessary)
- Upgrade database (if necessary, refer to PAM)
- Change to new High Availability Setup (if necessary)
- Clean-up XI tables
 - Get rid of messages with errors
 - Minimize table contents by reducing latency period (if acceptable to business)
- Activate or delete open change lists in Integration Builder
- Either Upgrade XI 3.0/PI 7.0 to PI 7.1 or to PI 7.1, EHP 1, including execution of all post-upgrade steps or Upgrade PI 7.1 to PI 7.1, EHP 1
- Adjust and redeploy adapter modules and Java Proxies (if used)
- Deploy J2EE5 compliant JDBC/JMS drivers (if used)
- Redeploy certified third-party adapters and third-party content (if used)
- Check that message packaging is switched on globally
- Configure new features of PI 7.1 (for example Services Registry, and so on)
- Testing your business scenarios
- Repeat upgrade steps for test and production system

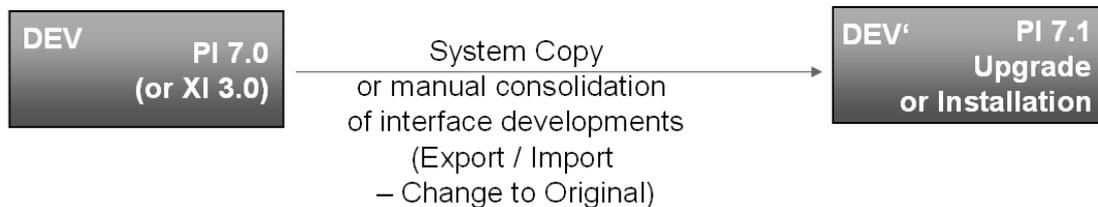
3.1.2 Summary of Possible Activities Post Upgrade

- Evaluate your scenarios with regard to where PI 7.1(including EHP 1) could add additional value
 - Point-2-Point scenarios
 - Usage of Advanced Adapter Engine scenarios
 - Package processing for ccBPM scenarios
 - New IDOC packaging with EHP 1
- Develop new versions of your business scenarios using new features of PI 7.1 or PI 7.1, EHP 1
- Test the new versions of your business scenarios
- Transport new versions of your business scenarios to production

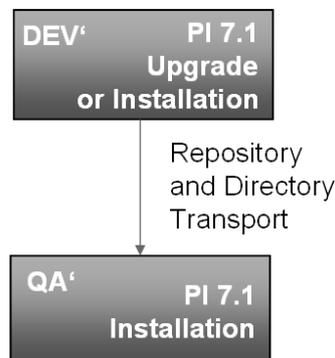
3.2 New Installation and Phase-out

This option requires a new parallel PI 7.1 (including EHP 1) landscape consisting of a development, quality assurance, and a new productive system.

It starts with providing the PI 7.1 (including EHP 1) development system. This can be created by either performing a system copy and upgrade of your existing XI 3.0/PI 7.0 development system, or by implementing a new PI 7.1 (including EHP 1) installation alongside and a restricted (well-controlled) movement of existing interface developments by export/import and changing of ownership of developments to the new PI 7.1 (including EHP 1) development system.

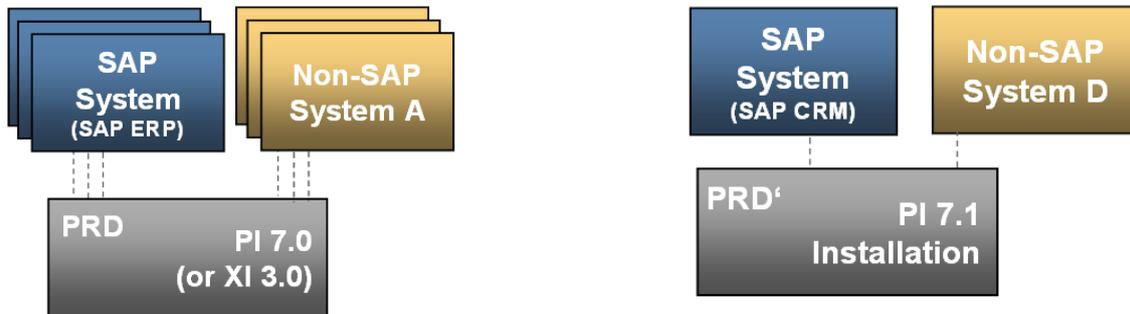


Take your time to become familiar with PI 7.1/PI 7.1, EHP 1 features and functions. Develop new interface scenarios to go live in PI 7.1/PI 7.1, EHP 1 first, before you start moving the existing systems with their interfaces from your running landscape to the new landscape.



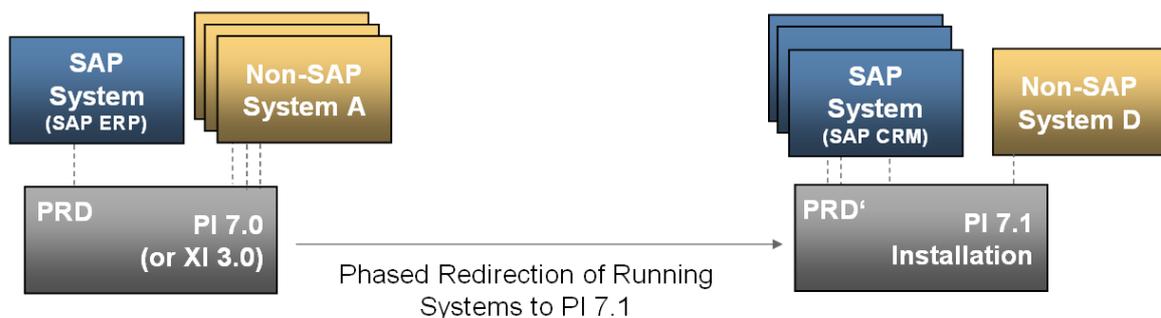
Install the PI 7.1/PI 7.1, EHP 1 quality assurance and production system from scratch. Transport the integration scenarios from PI 7.1/PI 7.1, EHP 1 development system into the new quality assurance system. Perform project work to ensure running and optimized PI scenarios for new systems that are to be connected with PI 7.1 or PI 7.1, EHP 1. Get familiar with the new features and functions in PI 7.1 (including EHP 1) and also execute volume tests on your quality assurance system to gain experience with the new environment.

Finally, install your productive PI 7.1 or PI 7.1 EHP 1 system and deliver all tested and released content to your productive system. Go live with the PI 7.1(or PI 7.1, EHP 1) in parallel with the existing XI/PI landscape and take this opportunity to get first-hand production experiences with the newly implemented and newly-connected business systems in your PI 7.1 or PI 7.1, EHP 1 environment.

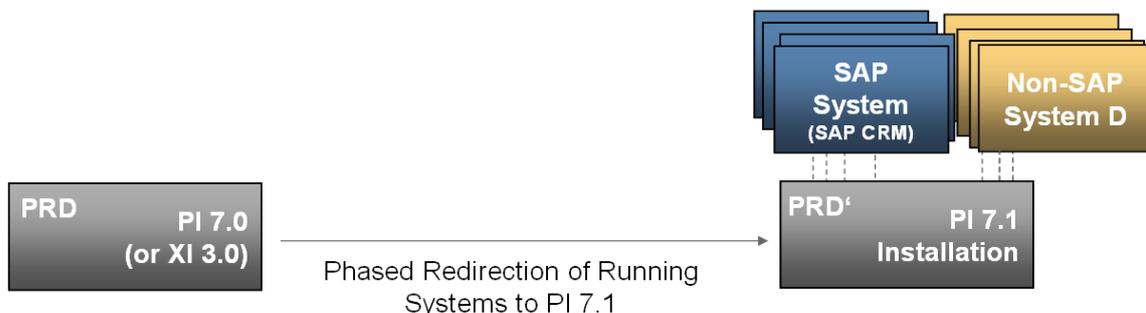


Now start the second phase – the phaseout of your old productive system.

Decide on which systems and scenarios are to be migrated first and which other systems and scenarios are to be scheduled to follow. After this, start with the necessary steps for normal project work for the selected business systems and scenarios, such as checking to adapt existing scenarios to use new features and functions of PI 7.1 (including EHP 1), and testing to validate correct functionality in the new PI 7.1 or EHP 1 context. Arrange with your business to redirect systems previously connected to the “old” XI/PI landscape to the new PI 7.1 or PI 7.1, EHP 1 landscape. We recommend that you redirect complete systems that belong scenario-wise together in scheduled phases from the running XI 3.0/PI 7.0 environment to the PI 7.1 or EHP 1 environment. Our recommendation is that you only redirect complete systems, especially for SAP backend systems using ABAP proxies where it is only possible to address exactly one connected PI system.



Finally plan and arrange in your project to redirect all remaining systems to the productive PI 7.1 or PI 7.1, EHP 1 landscape.



This concludes the phaseout process and means that you can finally get rid of your old XI 3.0/PI 7.0 system.

Please keep in mind that this approach results in NO messages and Integration Process history information being transferred from the old production system to the new one. As a result, message processing from the redirected business systems will start from the very beginning in the new system. For auditing reasons you might have to stop the old productive system by stopping all communication channels and the Integration Server, You then have to create a final backup of the stopped system and store the last backup of your old XI 3.0/PI 7.0 system securely, just in case your external auditor requires access to historical data (such as archived messages and Integration Processes) later on.

3.2.1 Summary of Activities for New Installation

- Check PI 7.1/ PI 7.1, EHP 1 PAM / Sizing for hardware requirements
- Evaluate HA setup for your landscape
- Install your PI 7.1/PI 7.1, EHP 1 development system
- Create/transfer communication users for business systems in PI 7.1/PI 7.1, EHP 1
- Optional: Setup new SLD 7.1 on PI 7.1 system and same for new PI 7.1, EHP 1 system
 - Transport selected SLD content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 SLD
- Transport selected Integration Repository content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 ES Repository (Enterprise Services Repository)
(Note: XI 3.0/PI 7.0 metadata needs to be available in ES Repository as well)
- Transport selected Integration Directory content from XI 3.0 to PI 7.1/PI 7.1, EHP 1 Integration Directory
(Option: Create Integration Directory objects manually)
- Transport selected basic and operations configuration (for example, alert configuration, interface archiving settings, ABAP transports, and so on)
- Deploy J2EE5 compliant JDBC/JMS drivers (if used)
- Redeploy certified third-party adapters and third-party content (if used)
- Adjust and redeploy adapter modules and Java proxies (if used)
- Execute functional testing of redirected interfaces in the development system
- Repeat installation for the test and the production system (PI 7.1 or PI 7.1, EHP 1)
- Transport SLD/ES Repository/Directory content to PI test and production system (PI 7.1 or PI 7.1, EHP 1)
(Note: After first Integration Directory transport to the test or production system, communication channels have to be changed manually)
- Testing the business scenarios in test system

3.2.2 Summary of Activities for Phase-out

- Create/transfer communication users for external systems to be redirected to PI 7.1/PI 7.1, EHP 1
- Optional: Transport SLD content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 SLD
- Transport Integration Repository content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 ES Repository
(Note: XI 3.0/PI 7.0 metadata needs to be available in the ES Repository as well)
- Transport Integration Directory content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 Integration Directory
(Option: Create Integration Directory Objects manually)
- Transport ABAP content from XI 3.0/PI 7.0 to PI 7.1/PI 7.1, EHP 1 Integration Server

- Adjust ABAP mappings after transport due to new ABAP package handling in PI 7.1/PI 7.1, EHP 1
- Adjust and redeploy adapter modules and Java proxies (if necessary)
- Adjust the relevant interfaces to new PI 7.1 or PI 7.1 EHP 1 features and functions
- Execute functional testing of migrated interfaces on the development and test system
- Disconnect:
Adjust relevant business systems to send/receive data to/from PI 7.1 or EHP 1 system on the production system
- Optional: Create last backup of old production system for auditing later

4. Decision Factors

This unit lists important decision factors, including background description and rating support. The three most important – exclusive decision factors – are listed at the beginning.

If your environment allows an upgrade in principle, the following subsections listing IT/operations-related and interface/scenario-related decision factors provide more insights into what needs to be considered.

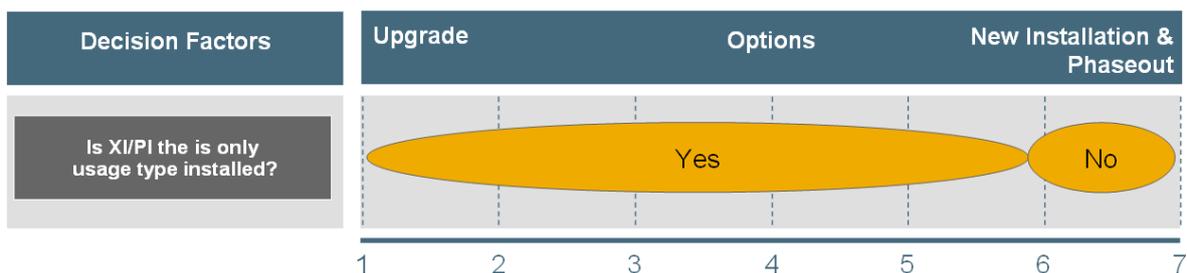
Alongside these factors, your customer-specific environment and project and IT setup might dictate other critical points that should also be listed and rated for your project decisions.

The following diagrams show our ratings in orange for each decision factor related to the questions that have to be answered. This can, but must not necessarily, be correct for your project. We recommend that you discuss these factors during the initial project phase within your team of experienced XI/PI consultants.

4.1 Exclusive Decision Factors

If one of the following three exclusive factors points your environment towards a new Installation and phaseout option, you can stop here in the document and start with preparing your project for the only available option: In your case, the installation of SAP NetWeaver Process Integration 7.1 or 7.1, EHP 1.

4.1.1 Usage Type

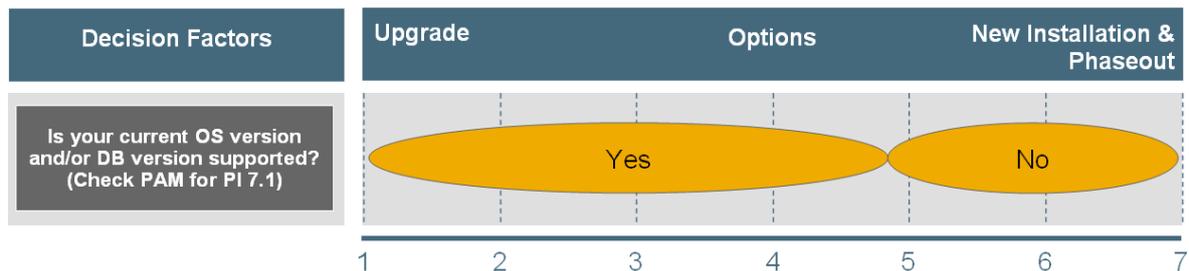


For PI 7.1 (including EHP 1) it is not possible to upgrade a productive system where more than the XI usage type is installed. If you are running also usage types like Business Intelligence (BI), Enterprise Portal (EP) or Development Infrastructure (DI) an Upgrade in your productive XI/PI system, then an upgrade cannot be executed.

In this case, your only option is to start with a parallel PI 7.1/PI 7.1, EHP 1 landscape for offering the new features and functions to your business.

This current release restriction might be eliminated with future availability of the complete SAP NetWeaver stack, therefore, you should check for an updated version of the SAP Note [1004107](#) "Release Restrictions for SAP NetWeaver PI 7.1". There is also a limitations note [1247043](#) for PI 7.1, EHP 1.

4.1.2 PAM Compliance

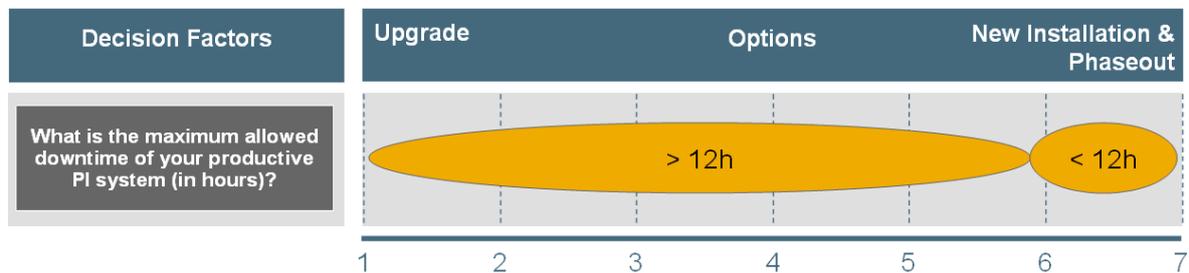


Check the Product Availability Matrix (PAM) for the supported operating systems and database releases running SAP NetWeaver Process Integration 7.1 under <http://service.sap.com/pam> → SAP NETWEAVER → SAP NETWEAVER PI → SAP NETWEAVER PI 7.1.

Starting with SAP NetWeaver Process Integration 7.1, only 64-bit operating systems are supported. If your productive system is currently still running on a 32-bit operating system, you will have to do an OS migration of your productive environment before you can technically perform an upgrade. As this additional step has to be considered for your project as an additional downtime phase of your productive system, you might be better off with a new installation on a new (faster) hardware instead. However, you can first perform the OS migration of your productive systems by system copy mechanisms followed by an upgrade, if the additional downtime is acceptable for your business.

The same argument is valid where your underlying database release is no longer supported with SAP NetWeaver PI 7.1 or PI 7.1, EHP 1

4.1.3 Downtime Requirements



For planned downtimes requirements to your productive XI/PI system, you will certainly have setup a Service Level Agreement (SLA) with your business departments relying on the middleware.

Depending on the maximum-allowed planned downtime (in hours), you might not have the option to go for an upgrade at all.

Based on our experience, a well-prepared technical upgrade can be achieved with a downtime of up to four hours. The downtime of a PI system depends greatly on the existing runtime data, such as the number of active messages in the DB tables. Additional downtime, independent of SAP software, could include taking care of the OS, including Network/FTP and DB patches. We calculate for up to eight hours of manual re-work after the technical upgrade, which includes changes to Integration Directory objects, such as communication channel adjustments or required maintenance to activate new PI 7.1 features like message packaging or IDOC packaging in PI 7.1, EHP 1

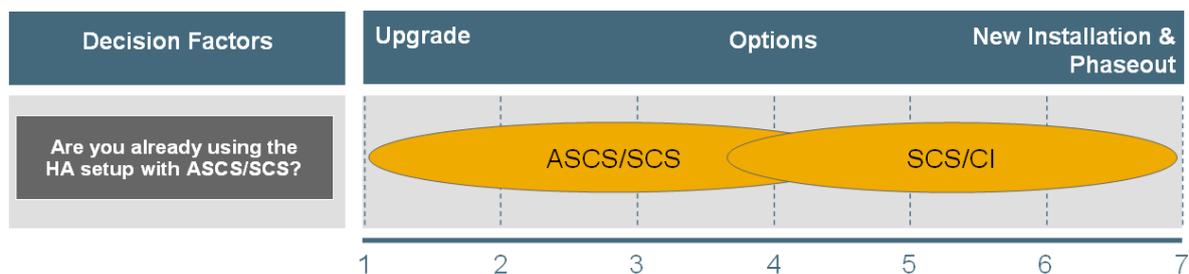
The technical upgrade procedure itself is already divided into an online preparation phase, where a parallel system environment with new SAP JVM and more is created for your running system, followed by a minimal offline upgrade phase, which is used to reduce the actual upgrade downtime to a minimum - but you still need to execute manual steps afterwards to get everything up and running again.

If during upgrade you suspect that it will exceed the maximum downtime allowed, you might have to decide at a pre-decided moment in time whether to finish the upgrade, even if it is running longer than expected, or to restore the system and schedule another time for the technical upgrade of your system. During the preparation phase of the upgrade, you should have been able to calculate an estimated downtime for your productive system and, depending on the calculated downtime and the downtime requirement, you would have been able to work out if they fit or not.

If your business does not allow for more than one business day downtime (8 hours), our recommendation is that you consider installing a new PI 7.1 or PI 7.1 EHP 1 system and keep your old productive system running whilst all interfaces are manually redirected. In this situation, it would even be possible for you to switch interface scenarios back from PI 7.1(or EHP 1) to the old environment if you were to encounter a critical showstopper situation with the new interfaces on PI 7.1(including EHP 1), which you had been unable to detect during the validation phase.

4.2 IT/Operations-Related Decision Factors

4.2.1 High-Availability Setup

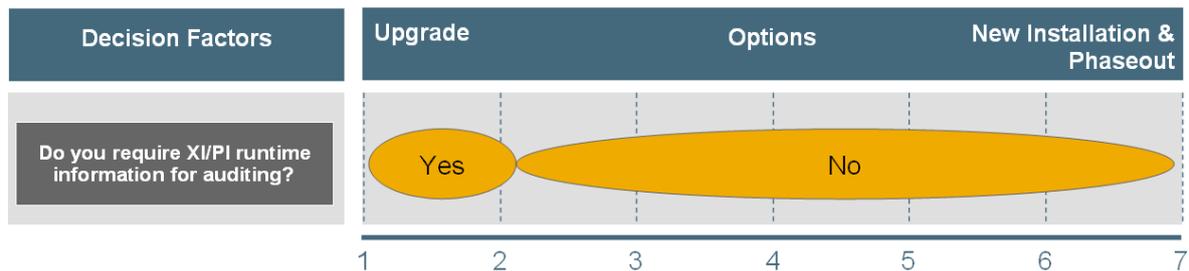


We assume that you have already configured a reliable high-availability setup for your mission-critical middleware system. Starting with SAP NetWeaver 7.0, SAP introduced a new option for configuring SAP NetWeaver systems using the ABAP Central Services, which can now be separated from the central instance in parallel to the SCS for Java. Each stack (ABAP and Java) has its own Message Service and Enqueue Service. For ABAP systems the Central Services are referred to as ASCS, for Java systems the Central Services are referred to as SCS. The ASCS and the SCS are leveled as Single Point of Failure (SPOF) and therefore require a high-availability setup.

Previously, the only supported configuration was the ASCS that was integrated within the ABAP central instance – and therefore the ABAP system central instance also needed a HA setup. In the graphic above, this setup is represented with SCS/CI on the right side.

For PI 7.1/ PI 7.1, EHP 1, we recommend that you setup the system using the ASCS/SCS only. If you have already made the configuration changes to your productive XI/PI landscape, an upgrade will cover the features to PI 7.1(including EHP 1). If your old system is still running on SCS/CI, you might want to start with a new PI 7.1/ PI 7.1, EHP 1 installation using the new configuration option for the ASCS/SCS HA setup from the very beginning.

4.2.2 Auditing Requirement



Do you communicate business relevant data directly from your productive XI/PI system to external customers and partners? Is your business using payload modification on XI/PI? Do you create completely new messages in XI that cannot be reproduced outside of the original sending systems, due to temporary data retrieval?

If you answer 'yes' to any of these questions, we assume that you have a high level of demand for storing and making the messages processed and transferred via the XI/PI system available to your business teams, and even to external auditors. In this case, you have a high requirement for storing historical message and message processing data of your productive system, which means that you should consider upgrading your environment. Alternatively, you have to keep the latest backup of your productive XI/PI system on hand and ensure that, if business needs require access later on, the system could be rebuilt and access to the message relevant data could be provided.

If you have mostly internal communication going through your XI/PI system, or you use an additional EDI adapter for external communication that takes care of archiving and access issues, you might not be interested in historical data at all. In this case, you do not require audit-relevant information, but your business might still need to know about messages processed weeks ago. In this case, you have to rate how important the history data of messages processed in your productive XI/PI system is to you and your business.

4.2.3 Basic and Operations Customizing

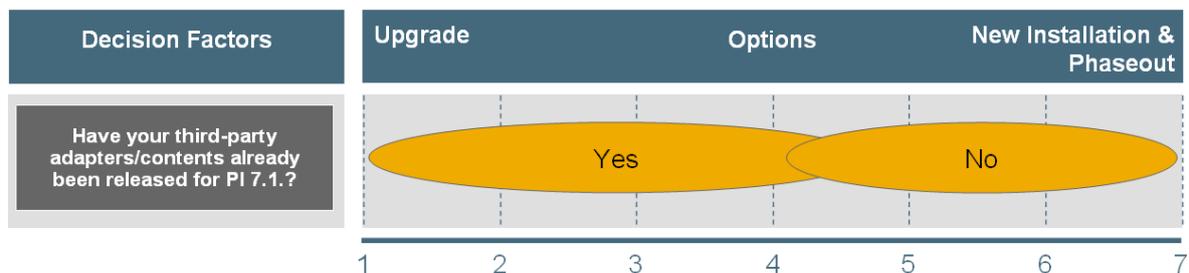


This criterion targets the topic of "How intensively have you already built an operation backbone around your productive XI/PI system?". Have you already integrated your XI/PI system tightly into your monitoring landscape, for example, does it consist of Solution Manager, Central Monitoring systems, and Firewall/DMZ settings? In this case, you might not want to invest again into the necessary configuration steps to setup a parallel new PI 7.1/PI 7.1, EHP 1 system. Instead you might want to use the existing configuration and simply upgrade your existing XI/PI system.

But, if you did not yet invest too much into the configuration, you might like to consider the effort acceptable to start from scratch and integrate, or start building, a new monitoring environment around your new PI 7.1(including EHP 1).

Basis objects, such as alert configuration (alert categories and alert rules), interface archiving settings, and so on, can be transported to ease the transfer efforts. Other configuration changes, such as changes to the instance profiles and JEE properties, have to be reconfigured manually in the new PI 7.1/ PI 7.1, EHP 1 system.

4.2.4 Third-Party Adapters and Content



SAP and software partners are taking efforts to ensure that the third-party adapters certified with older releases are also certified for PI 7.1 or PI 7.1, EHP 1. SAP offers the solution catalog to check for software that has already been certified (<http://www.sap.com/ecosystem/customers/directories/SearchSolution.epx>). Additionally, you can contact the software provider to see how far they are with the PI 7.1 (including EHP 1) certification of their adapters.

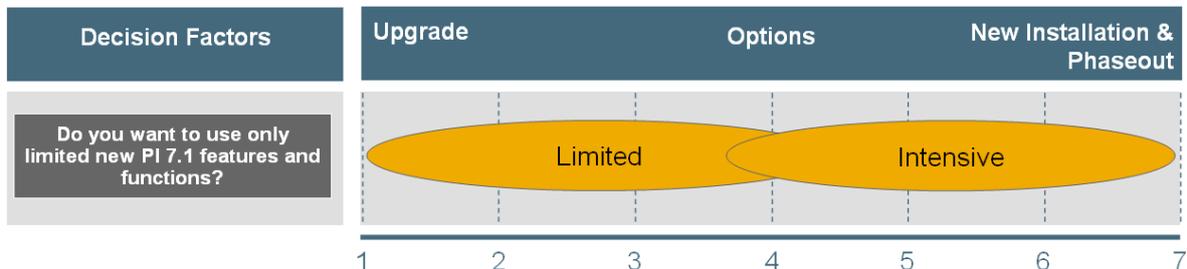
One possible option for overcoming the non-availability of these solutions for PI 7.1 (including EHP 1) would be to install a non-central Advanced Adapter Engine in the productive XI/PI system that would contain the third-party adapters. You would then change the communication channel configuration and have them point to the non-central Advanced Adapter Engine for execution, instead of the central Advanced Adapter Engine used previously. Next, you would upgrade the XI/PI system and keep the non-Central Advanced Adapter Engine on the old release for the time being, before the third-party adapters are available for PI 7.1 (including EHP 1) as well. More information about this intermediate solution using a non-central Advanced Adapter Engine can be found in the release notes of SAP NetWeaver PI 7.1 and PI 7.1, EHP 1 at below links respectively: [Developing Adapters and Modules \(Changed\)](#) and [Enhancement Package 1](#)

Alternatively, you could decide to keep the scenarios using the third-party adapters running on the productive XI/PI system, and plan to investigate later into time and resources for redirecting the relevant interfaces completely to the newly-installed PI 7.1/ PI 7.1, EHP 1 systems. Our recommendation, as listed above, is for a new installation of PI 7.1/ PI 7.1, EHP 1 whilst keeping the scenarios running in the productive system for now.

The same facts apply for delivered and certified XI/PI content.

4.3 Interface/Scenario-Related Decision Factors

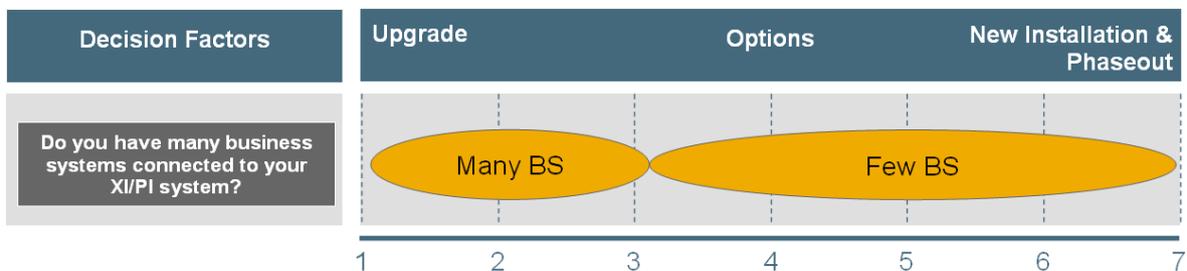
4.3.1 New PI 7.1 Feature and Function Usage



What are your business reasons for looking into PI 7.1 or PI 7.1 EHP 1? Does your business require the new SOA -related features, such as Enterprise Service Repository with enhanced modeling capabilities, the Services Registry, and Web Service standards? Or do you want to go to PI 7.1(or EHP 1) because your XI 3.0 system is going to run out of SAP-standard maintenance sooner or later and you would like to invest in the latest product version with enhanced high-volume support for EO/EIO messages?

As you can see from the above diagram, the main recommendation is to check out the new features and function based on a new PI 7.1(including EHP 1) installation, instead of doing this all in one step with the upgrade of the existing system at the same time to get new features and functions up and running.

4.3.2 Number of Connected Business Systems



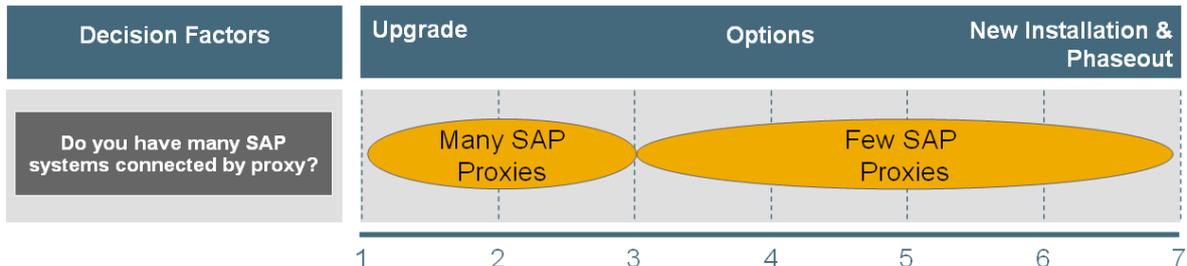
How many business systems are currently connected to your productive XI/PI system? How many types of business systems are connected, that is, how many different technologies can be distinguished on the business systems side?

In the graphic above we recommend that you go for an upgrade if you have many business systems. The question now remains, what does “many” actually mean? This rating and number has to be provided on a customer-specific basis, unfortunately. For example, a customer has 20 plant systems, and they are all connected by the same interface scenario and the same adapter type. In this case, the transfer of such identical systems might be easier to achieve than by moving 20 completely individual systems with individual interfaces and many types of adapters.

Our rule of thumb would be to say less than 25 different business system types could still be managed with a new installation and phaseout in a well-organized project. More than 25 different business system types might be not possible to handle with separated milestones; here a “big bang” approach for the whole company would be the better decision to make. Again, this value of 25 different business system types is not a fixed number; it is simply a recommended value. You should decide on your own project whether the effort of manually redirecting systems from a running XI 3.0/PI 7.0 system to a new

PI 7.1(including EHP 1) system can be achieved in your environment, and how much you would rate this effort.

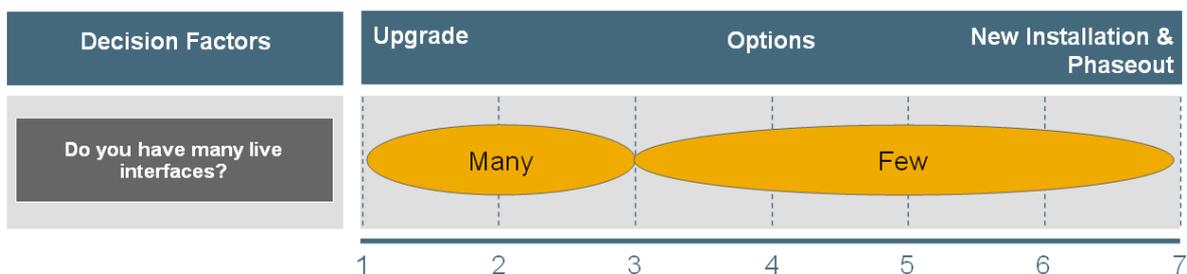
4.3.3 Number of SAP Systems Connected by Proxy



Check this criterion only for SAP business systems that are running ABAP proxy-based communication to and from the XI/PI Integration Server. If you have such business systems, you have to know that they can only be connected to exactly one Integration Server, and that it is not possible to switch only dedicated interface to one IS and other interfaces to another IS.

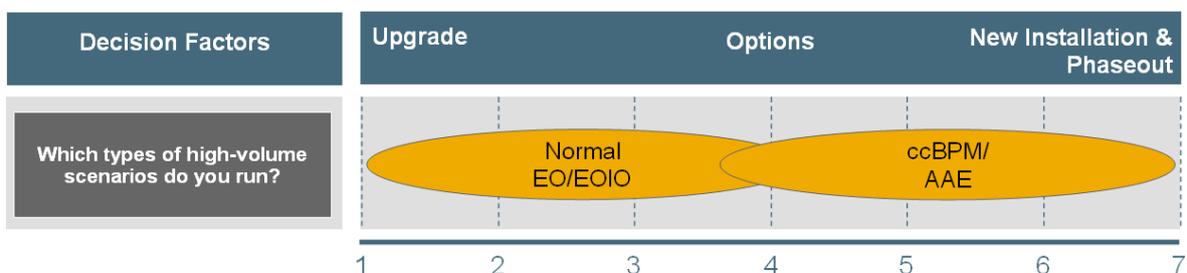
This limitation only has to be taken into account when you decide to go for the new system installation and phaseout option. In this case, the phaseout has to target complete SAP business systems and all of their XI/PI interfaces in one go when the transfer date is targeted.

4.3.4 Number of Live Interfaces



Nearly the same arguments provided under 4.3.2 can be applied to this criterion. We already consider more than 100 productive interfaces as many interfaces and, based on this number, the rating would explicitly go towards the efforts of an upgrade project.

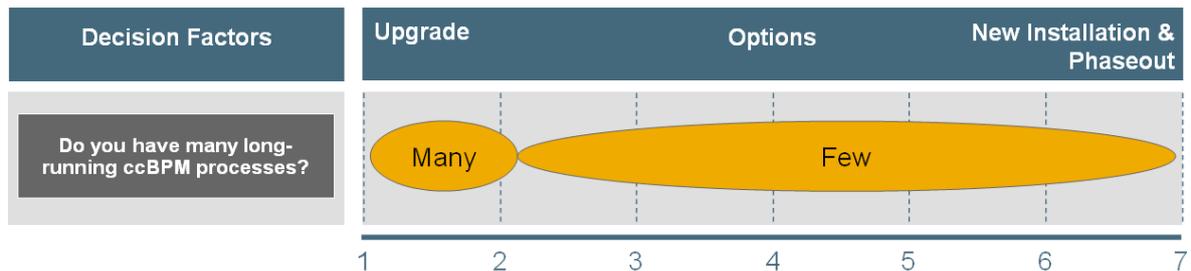
4.3.5 Type of High-Volume Interfaces



Message packaging for EO/EOIO messages is activated by default in the new installation of PI 7.1(including EHP 1). This functionality is already available in PI 7.0, and therefore the upgrade should be easy as the functionality itself does not require any interface design changes. This looks different when the new high-volume features for packaging ccBPM and using Advanced Adapter Engine only

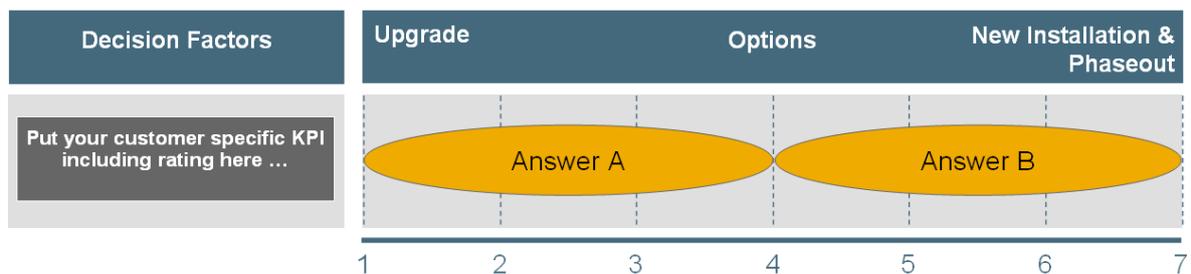
communication should be used in PI 7.1(including EHP 1). In this case, a reconfiguration for your ccBPM integration processes is required that will enable the packaging per integration process individually. The configuration has to be changed for Advanced Adapter Engine-only scenarios and IDoc packaging introduced with PI 7.1 EHP 1. We recommend that you get more experience with PI 7.1 and EHP 1 features.

4.3.6 Long-Running ccBPM Processes



This criterion follows the same path as the auditing criteria for the IT/operations-relevant decision factors. If, for example, you have long-running ccBPM processes that collect daily messages for a whole month and start the real business-relevant processing at the end of the month, we consider these to be long-running scenarios. To keep them running and open, an upgrade has to be the first choice, otherwise, you have to define and describe handling decisions regarding what is to be done for final transfer of these scenarios from the old product XI 3.0/ PI 7.0 system to the new PI 7.1/ PI 7.1, EHP 1 system. If you only have processes that run for less than 24 hours, we do not consider them to be long-running, and in this case a redirection should be easier to achieve by closing open processes on the old system, and starting the processes new on the PI 7.1(or EHP 1) system.

4.4 Customer-Specific Criteria



This guide can only give you some typical aspects to be considered with regard to the pros and cons for an upgrade and new installation and phaseout – there is always much more to be considered. For that, we would like to ask you to list all of your customer-specific concerns as well, including your rating proposals. For example, you could think of the following questions to be considered for a successful PI 7.1(including EHP 1) project in your company:

- Does your project team have already enough PI 7.1(including EHP 1) skills for modeling and development tasks at hand?
- Is your IT team already trained on SAP NetWeaver PI 7.1/ PI 7.1, EHP 1 operations?
- Does your IT budget allow for a parallel PI 7.1(including EHP 1) landscape alongside an existing productive one?

5. Customer Rating

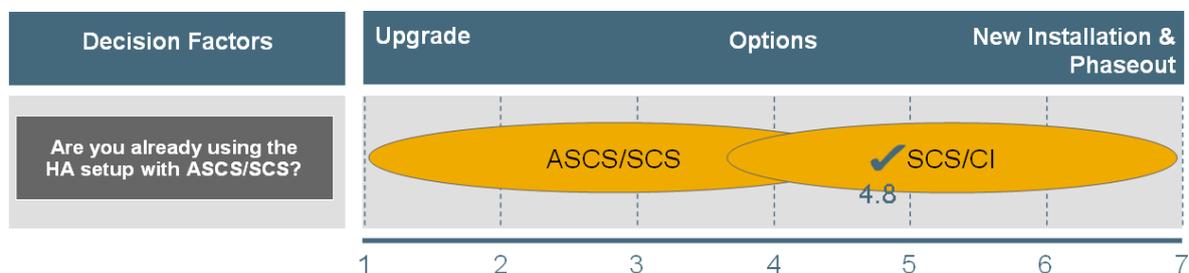
As an example the following ratings are considered by company called EXAMPLE that wants to decide for their specific customer situation what would be the best choice to obtaining a PI 7.1 or PI 7.1, EHP 1 system landscape. They are currently running a productive XI 3.0 landscape, but XI 3.0 no longer fulfills all of their stakeholders' business requirements and they are still in an XI rollout phase, which means that more and more business systems and integrations have to be brought onto the middleware.

Therefore, they finally want to decide how and when they should go with PI 7.1 or PI 7.1, EHP 1

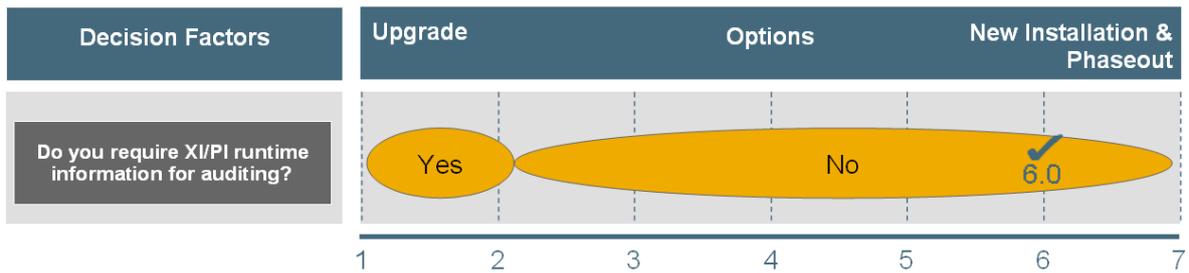
They checked the exclusive decisions factors listed at 4.1 and all three factors did not exclude the upgrade option. In their case they are running a "pure" XI 3.0 system with only the single XI usage type. They have already recently moved their productive system to a new hardware that includes a 64-bit operating system and have also already executed a DB upgrade. With this already settled they checked with their business and received confirmation that a well-organized downtime of a full weekend is acceptable. So now they will have to check all the other factors for their customer-specific situation.

5.1 IT/Operations-Based Rating

The productive XI/PI system of the customer is currently installed for high-availability setup without the new technology of splitting ABAB central services (ASCS) from the central instance. They have no plans to change the configuration in their productive system for now, but are open-minded towards the new HA setup possibility. Therefore they are rating the criteria "Are you already using the HA setup with ASCS/SCS?" with 4.8, expressing that they currently run their system with Java SCS and Central Instance, but they would be interested in the new ASCS/SCS and multiple dialog instances instead.



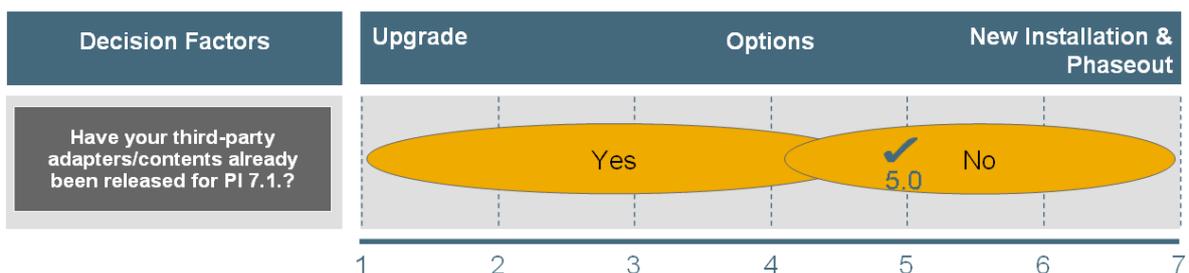
As the customer mostly uses XI/PI for internal communication and the requirement to archive and store messages is very limited, they do not see any business need to deal with message history. For this customer it is more important to get messages through XI/PI and to get information about messages with errors and solve them, but the business does not use the XI/PI system as the auditing system for message content at this time. A few interfaces require the option to change payload content in XI because the sending backend systems can be overruled from business needs, but as these are only a very limited number of interfaces, this customer rates the criteria "Do you require XI/PI runtime information for auditing?" with 6.0 – a clear indicator that they could live without message history context in a new PI 7.1 or PI 7.1, EHP 1 system.



Regarding the operations part of the XI/PI productive system, the customer feels that the configuration is in good shape. The customer knows that things would need to be adapted for more productive interfaces, but in general he thinks that the system is well customized and optimized. Therefore they would like to keep the existing basis configuration and rates the criteria “Is your productive system well customized and optimized with regard to Monitoring Setup, Alerting Setup, and Operations Setup?” with 2.0.



The customer uses only two third-party adapters in total (from the same vendor) and, based on the latest information that is available by the third-party vendor and the SAP Software Catalog, the certification of these adapters for SAP NetWeaver PI 7.1 (J2EE 5) has not yet taken place. The vendor told the customer that the certification is in progress and that the new release of the adapters should be available during the next five months. One option would be to install a non-central Advanced Adapter Engine first against the productive XI/PI system containing the third-party adapters, followed by reconfiguring the communication channels of the third-party adapter to the non-central Adapter Engine. Then upgrade the XI/PI system and keep the non-Central Advanced Adapter Engine on the old release for the time being, before the third-party adapters become available for PI 7.1 (including EHP 1) as well. An alternative would be to keep the scenarios using the third-party adapters running on the productive XI/PI system, and later investigate the time and resources required to redirect the relevant interfaces completely to the new installed PI 7.1/ PI 7.1, EHP 1 systems. In this case the customer himself rates the criteria “Have your third-party adapters and contents already been released for PI 7.1?” with 5.0.

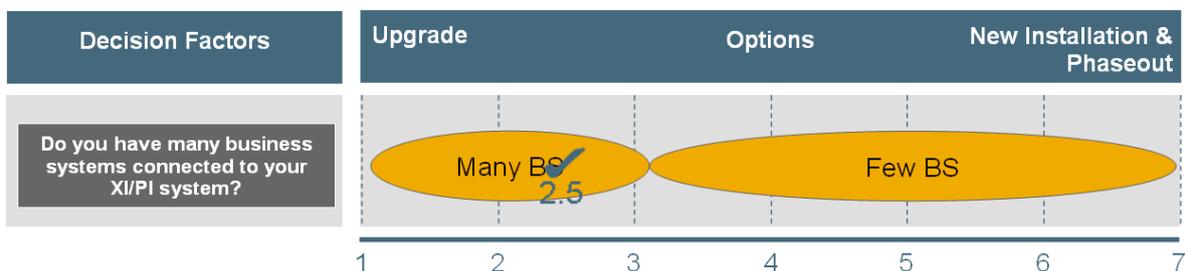


5.2 Interface/Scenario-Based Rating

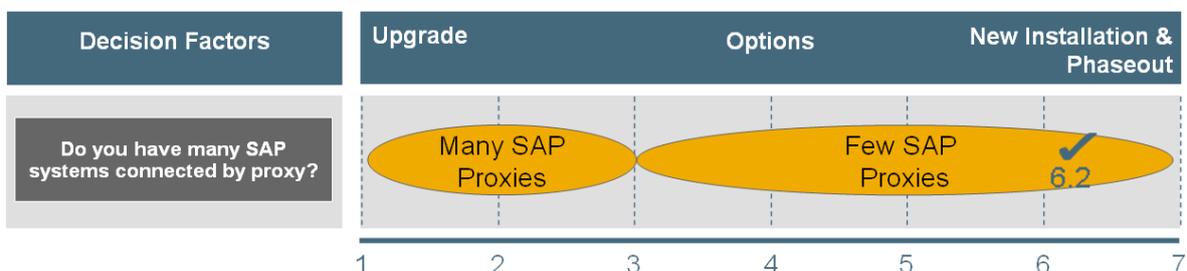
Let us assume that this customer is very much interested in the new features, especially the Web service support and high-volume features that PI 7.1 or PI 7.1, EHP 1 offers. Accordingly, they rate the criteria “Do you want to use only limited new PI 7.1 features and functions?” with “Intensive Usage” – but still they want to be on the more conservative side in the project phase, and therefore they would rate this factor with 5.0 out of 1 to 7.



The answer here is yes, they already have more than 30 business systems currently connected and they are planning to roll-out the PI solution to more countries – as a result they will have more than 100 business systems connected for the final phase. They rate the criteria “Do you have many business systems connected to your XI/PI system?” with 2.5 as they assume, based on their final plan, that 30 business systems is already many, but not too many to be dealt with effectively if the decision does indeed go to a new installation project.

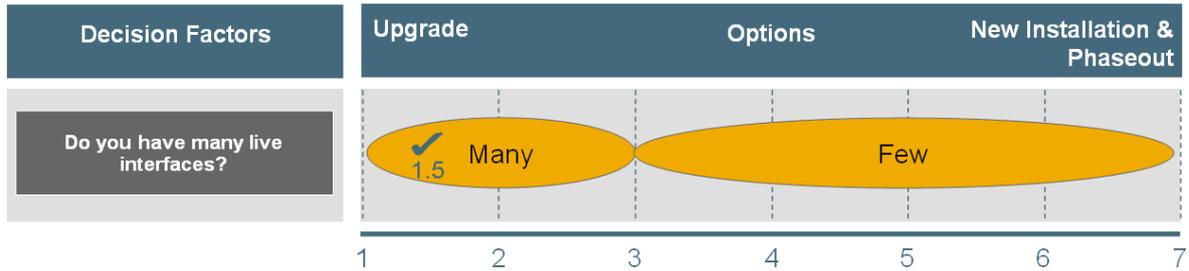


This customer currently has most of the SAP system connected by RFC and IDocs to XI/PI, therefore only two systems are currently on ECC 6.0 and linked by SAP proxies to the productive XI/PI system, so here they rate the criteria “Do you have many SAP systems connected by proxy technology?” with 6.2.

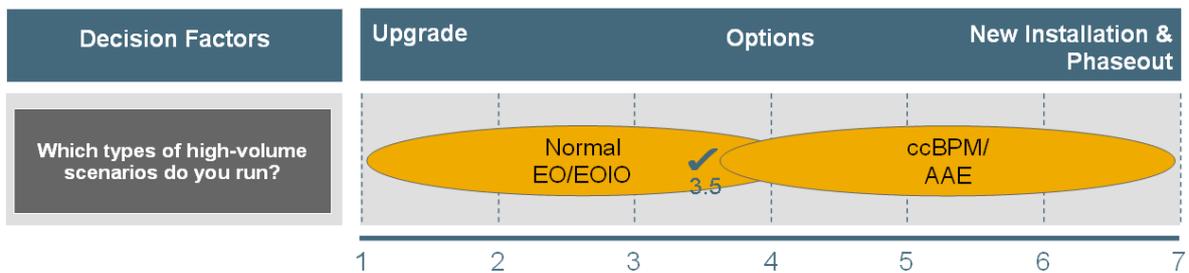


With more than 30 business systems, the customer is currently already running more than 210 interfaces (ratio of seven interfaces for each business system). The customer rates the effort quite

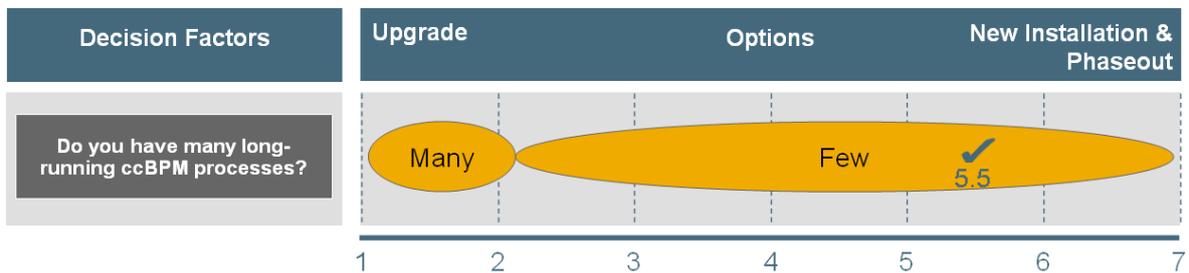
high for his productive number of interfaces, therefore he rates the criteria “Do you have many live interfaces” with 1.5.



Only a few really high-volume interfaces with more than ten messages per second are currently running on the XI/PI system, and the type of these few interfaces are only of type EO without ccBPM usage, and without the option to use scenarios on the Advanced Adapter Engine only. Therefore, the rating for the category “Which types of high-volume interfaces do you run?” is estimated to be 3.5 in this case.

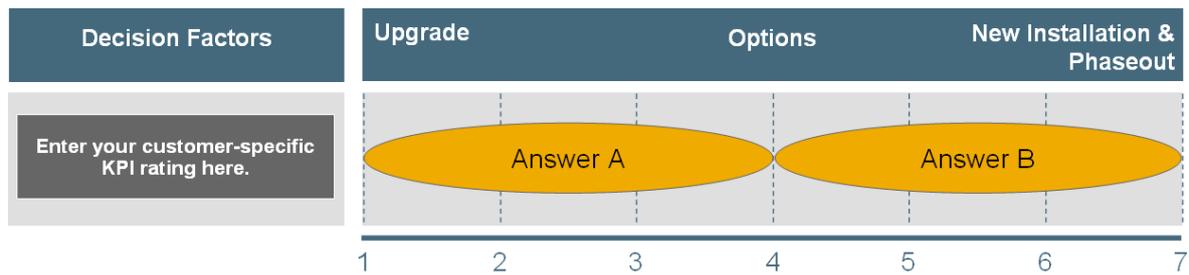


The customer does not have so many ccBPM processes live and running, and out of these few processes there is only a very limited number of ccBPM processes that really run for longer than 24 hours in the system. In this case, the customer decides to rate the criteria “Do you have many long-running ccBPM processes?” with 5.5. This means that, in the case of a new installation, the customer would take care of long-running ccBPM processing manually and could afford manual work on their side, but this has to be taken into account for the project planning details.



5.3 Customer KPIs

This unit has to be filled in with customer-specific factors and ratings. This unit is currently empty for the company EXAMPLE.



5.4 Rating Summary

Based on our customer EXAMPLE, the following summary rating can be constructed and the overall rating (without customer add-on criteria and ratings) can be calculated to 4.2. Based on our chosen scale from 1 to 7 and the tendency from 1 to 3.5 for Upgrade and from 3.5 to 7 for New Installation and Phaseout, the customer has to look into creating a detailed program plan for the second option based on the customer individual rating.

Factor	Customer Rating
HA Setup	4.8
Auditing Required	6.0
Long-Running ccBPM Processes	5.5
Well-Configured Productive System	2.0
Third-Party Adapters / Content	5.0
Usage of New PI 7.1 Functionality	5.0
Many Connected Business Systems	2.5
Many SAP Systems Connected By Proxies	6.2
Many Live Interfaces	1.5
Types of High-Volume Scenarios	3.5
Customer-own KPIs – For Example Skills, Operations Costs, and so on	tbd
Summary Rating	4.2

Please keep in mind that this rating is a judgment made in your project by the project team and experienced SAP consultants in the XI/PI area, who discuss and agree together on the criteria and criteria weighting.

It is important to keep in mind that NO mathematical formula is given with the criteria and weightings in this guide. If you received a similar result of 4.2 for your customer situation – a middle value - then you might want to use a *priority* rating instead. With this you can also assign a factor of importance to each criterion, for example, you would like to prioritize the criteria “Many live interfaces” and “Many connected business systems” by factor 2, due to the fact that these criteria mean quite a lot of

coordination work for your project team with the involved businesses to provide some guidance on the relative importance of the criteria. All other factors should remain with factor 1.

Factor	Customer Rating	Factor Rating
HA Setup	4.8	1
Auditing Required	6.0	1
Long-Running ccBPM Processes	5.5	1
Well-Configured Productive System	2.0	1
Third-Party Adapters / Content	5.0	1
Usage of New PI 7.1 Functionality	5.0	1
Many Connected Business Systems	2.5	2
Many SAP Systems Connected By Proxies	6.2	1
Many Live Interfaces	1.5	2
Types of High-Volume Scenarios	3.5	1
Customer-own KPIs – For Example Skills, Operations Costs, and so on	tbd	tbd
Summary Rating	4.2	3.5

With this guide we just wanted to share important criteria, which you should think of when deciding for or against an option to get to PI 7.1 or PI 7.1, EHP 1. Use this guide as a “think about” cheat sheet.

6. Appendix

6.1 Upgrade Documentation

<http://service.sap.com/instguidesNWPI71> → Upgrade.

This covers both PI 7.1 and PI 7.1 EHP 1 documentation.

6.2 SAP Notes

- [1135704](#): SAP NetWeaver PI 7.1 Composite Note
- [1004107](#): Release Restrictions for SAP NetWeaver PI 7.1.
- [1061649](#): Upgrade to SAP NetWeaver Process Integration 7.1
- [1154961](#): Checks to be executed before ESR/PI Upgrade to 7.1
- [1148288](#): Reports for migration of package data
- [1004000](#): PI 7.1 Adapter/Module Development: API Changes since SP0
- [954820](#): Compatibility of SLD in the system landscape
- [939592](#): PI Usage Configuration versus Central SLD
- [1156185](#): Central Note : Upgrade to Systems on SAP NetWeaver 7.1 EHP 1
- [1247043](#): Release Restrictions for EHP 1 for SAP NetWeaver PI 7.1

6.3 Important SAP Library Links

Java Proxy Runtime:

http://help.sap.com/saphelp_nwpi71/helpdata/en/64/7e5e3c754e476ee10000000a11405a/frameset.htm

http://help.sap.com/saphelp_nwpi711/helpdata/en/48/58dd04e10f72d0e10000000a42189c/frameset.htm

Developing Adapters and Modules (Changed):

http://help.sap.com/saphelp_nwpi71/helpdata/en/45/6aabe1eea040c2e10000000a1553f7/frameset.htm

http://help.sap.com/saphelp_nwpi711/helpdata/en/8b/895e407aa4c44ce10000000a1550b0/frameset.htm

Java Mappings (SAP PI 7.1):

http://help.sap.com/saphelp_nwpi71/helpdata/en/e2/e13fcd80fe47768df001a558ed10b6/frameset.htm

http://help.sap.com/saphelp_nwpi711/helpdata/en/e2/e13fcd80fe47768df001a558ed10b6/frameset.htm

XSLT Mappings (XSLT Toolkit):

http://help.sap.com/saphelp_nwpi71/helpdata/en/73/f61eea1741453eb8f794e150067930/frameset.htm

http://help.sap.com/saphelp_nwpi71/helpdata/en/73/f61eea1741453eb8f794e150067930/frameset.htm

Javadocs on SAP PI 7.1 (Adapter, Module and Mapping Development) :

<https://help.sap.com/javadocs/pi/SP3/xpi/index.html>

www.sdn.sap.com/irj/sdn/howtoguides