

Wonderware Skelta BPM

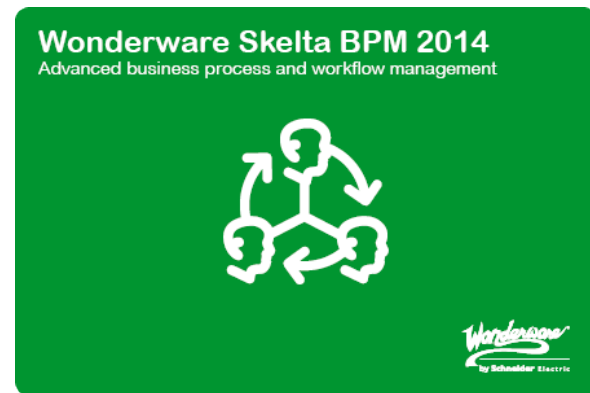
Андрей Иванов
архитектор решений



Что такое Wonderware Skelta BPM 2014

Объединение двух имен для одного программного продукта :

- Wonderware Workflow 2012R2
- Skelta BPM.NET 2011



Что такое управление бизнес-процессами (BPM)?

BPM - это дисциплина;
это практика;
это то, что вы делаете.

“Управление бизнес-процессами (BPM) это дисциплина, касающаяся любого сочетания:

- ❖ моделирования,*
- ❖ автоматизации,*
- ❖ выполнения,*
- ❖ контроля,*
- ❖ измерения,*
- ❖ и оптимизации*

*деловой активности, направленная на достижение целей предприятия,
охватывающая системы, сотрудников, заказчиков и партнеров
в пределах и за пределами предприятия.”*

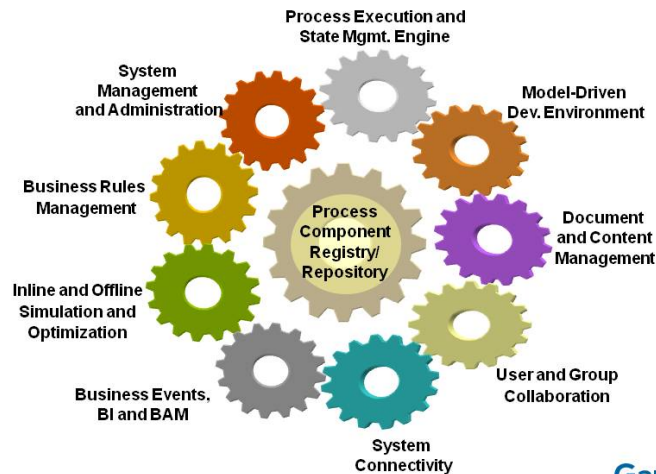
Источник: <http://www.wfmc.org/what-is-bpm>



WORKFLOW MANAGEMENT COALITION

Что такое система управления бизнес-процессами (BPMS)?

- ❖ **Автоматизация сложных бизнес-процессов в разнородных бизнес-приложениях и организациях**
- ❖ **Взгляд на бизнес как на непрерывный процесс от точки к точке**
- ❖ **Определяет и управляет, как выполняется деловая активность, включая взаимодействие людей и/или систем для выполнения простых или сложных задач**
- ❖ **Измерение показателей бизнес-процесса**



Gartner

Преимущества использования BPMS

Which of the Following Would You Rate As the Single Greatest Benefit of Any BPM Software You Are Using?	Total
Ability to Visualize, Simulate, and Troubleshoot Business Processes	19%
Analytical Reporting and Business Performance Management	7%
Automation of Standard Procedures and Processes	28%
Change Business Rules and Processes Without Impacting Underlying Applications	17%
Enforce Best Practices and Required Procedures	10%
Ensure Accurate and Consistent Data Entry or Document Creation	4%
Manage and Monitoring the Performance of Operations and Personnel	11%
Standardize Interchange of Process Models	3%

Source: Transformation & Innovation

Топ-3 преимуществ использования BPM-систем:

1. Автоматизация стандартных процессов и процедур
2. Возможность моделировать и оптимизировать процессы
3. Возможность принять изменения с наименьшими затратами и низким риском

Повышение уровня производительности, сотрудничества и инноваций

Что такое промышленные бизнес-процессы?

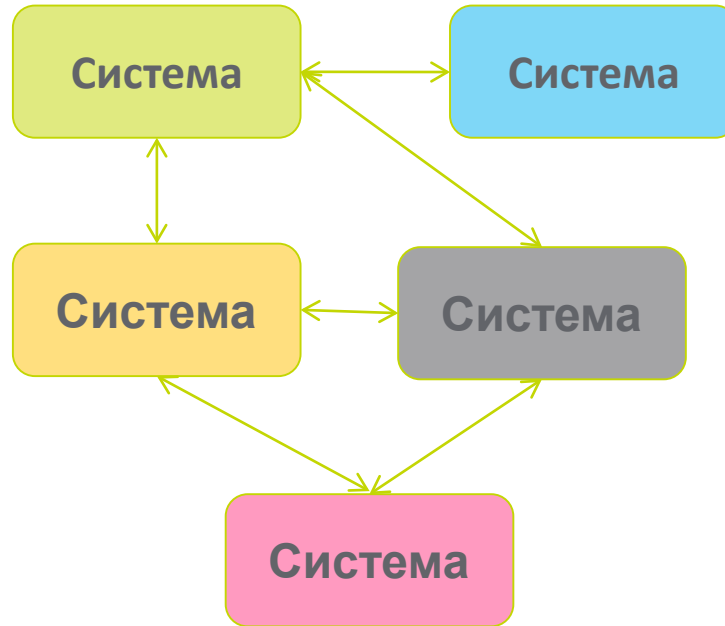
На предприятии
процессы могут быть связаны с...

- Производственной деятельностью
- Техническим обслуживанием
- Вопросами качества
- Логистикой и складским хранением
- Безопасностью жизнедеятельности
- Прочим



**В большинстве случаев эти процессы должны
быть согласованы в рамках предприятия...**

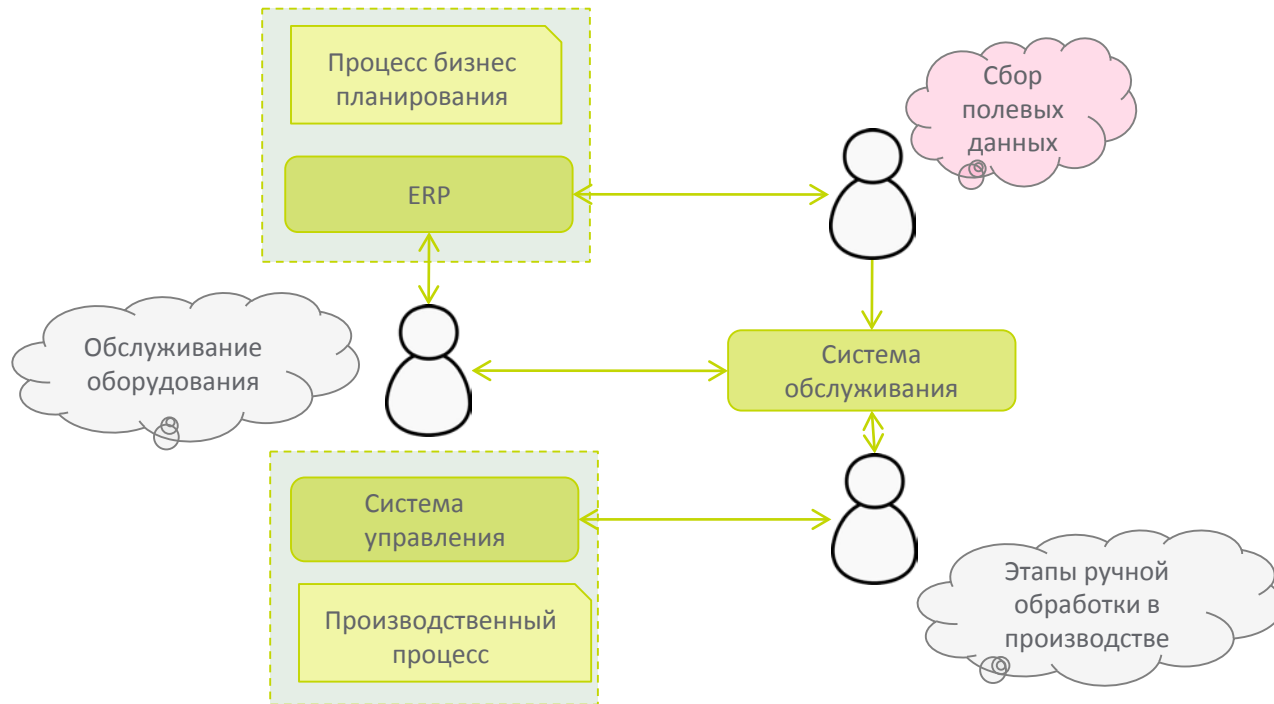
Задача – взаимодействие всех систем



Задача – взаимодействие всех систем



Более серьёзная задача – взаимодействие людей и систем



Эта задача решается с помощью **BPMS**

BPMS «следит» за
процессами, участвующими в
производстве...

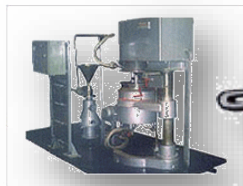
Состояние
машин

Ввод
данных
оператора

Технологиче
ские
параметры

Деловые
операции

События
времени



Машины



Операторы



Управление
технологическими
процессами



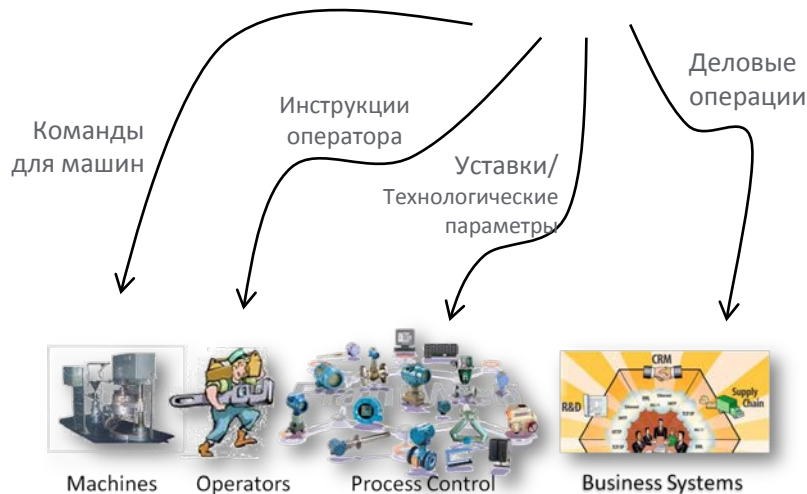
Бизнес системы



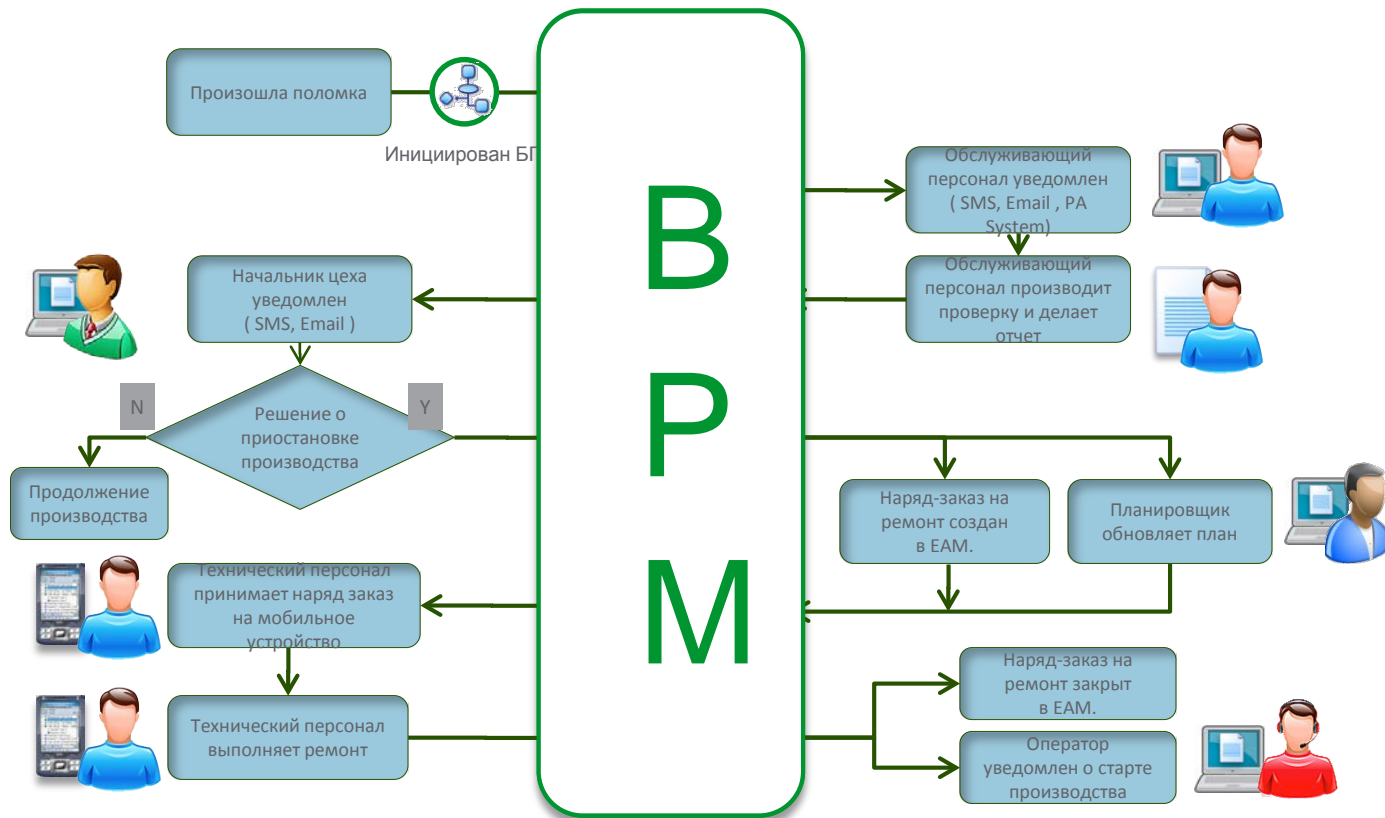
BPM



И инициирует другие процессы ...



Пример ВРМ сценария...



Что такое Wonderware Skelta BPM?

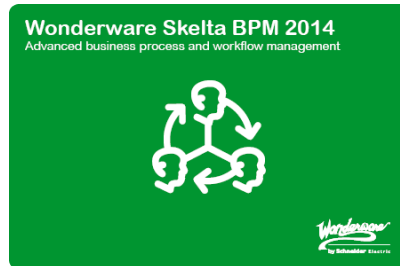
Wonderware Skelta BPM – это управление бизнес-процессами с полным набором инструментов для моделирования, выполнения и оптимизации этих процессов.



Wonderware Skelta BPM для производства

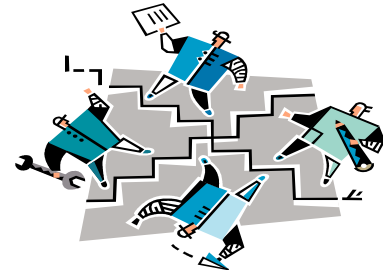
Wonderware Skelta BPM предоставляет полный цикл для бизнес-процессов предприятия и управления процессами производственных операций.

- Интеграция с Wonderware System Platform
- Обмен данными с Avantis EAM, Wonderware MES, InBatch
- Интеграция с корпоративными приложениями, такими как Microsoft SharePoint and Office
- Подключение к ERP, PLM и QM - системам



Wonderware Skelta BPM

предоставляет...



- ❖ **Стандартные подходы** для нормальных, незапланированных процессов и обработки исключений
- ❖ **Гибкость процесса**, позволяющую **управлять изменениями** с участием всех заинтересованных сторон
- ❖ Повышение уровня **взаимодействия**, позволяющего **людям, командам, организациям и системам** работать вместе более **эффективно**
- ❖ **«Защиту знаний»** и снижение рисков ручной обработки

Wonderware Skelta BPM

Ключевые элементы полного цикла BPMS

Постоянное
совершенствование
ваших процессов

Совершенствование

Модель

Создание
процессов, форм,
отчетов



Поиск «узких» мест

Анализ

Выполнение

управление &
эскалация задач,
координирование

Wonderware Skelta BPM

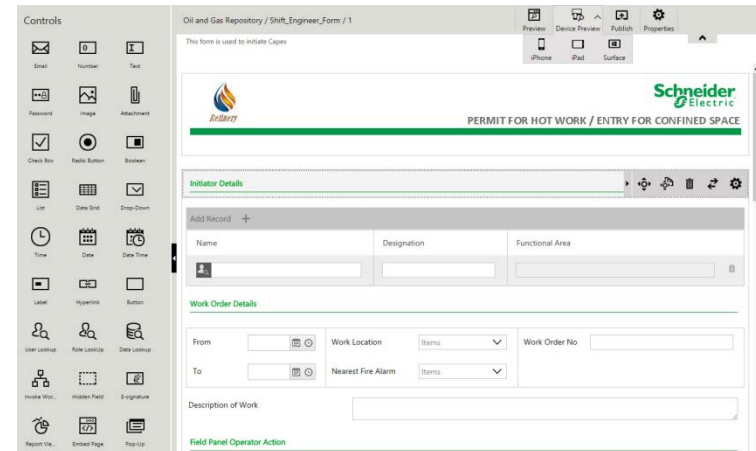
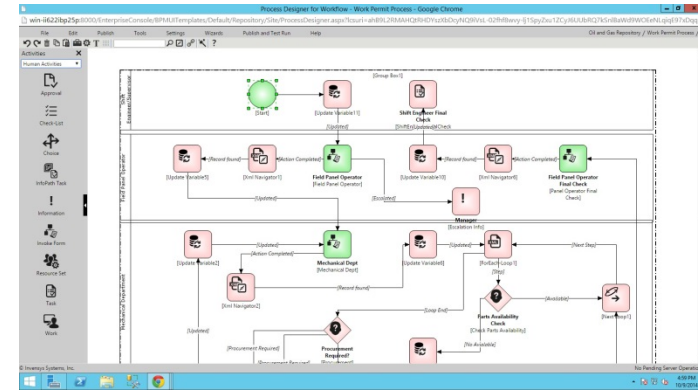
Модель процесса

Моделирование процесса

- Визуальная среда моделирования
- Конфигурируемые «из коробки» блоки для общих задач
- Диаграммы процессов могут быть импортированы из Microsoft Visio
- Поддержка сложных ветвящихся процессов

Моделирование форм

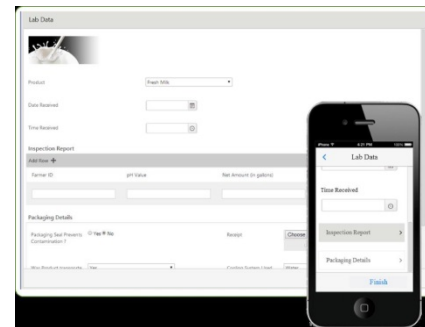
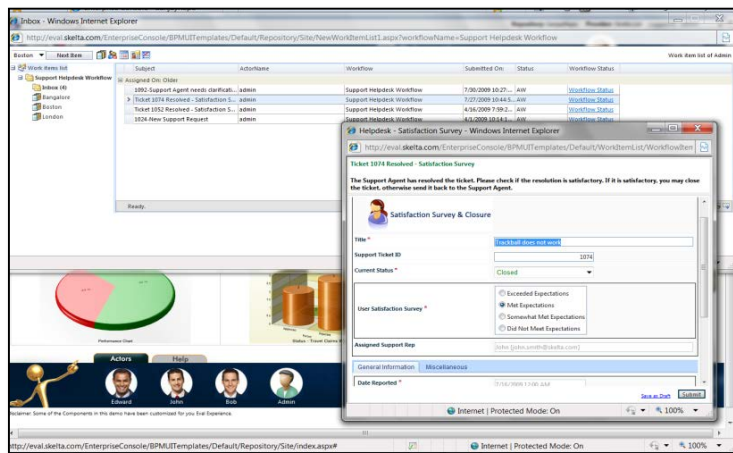
- Моделирование сложных форм для сбора или отображения данных
- Редактор WYSIWYG позволяет конечным пользователям создавать новые и редактировать существующие формы
- Поддержка «drag and drop»
- Поддержка форм для разных мобильных устройств
- Скрипты для сложных задач
- Поддержка электронных подписей
- Поддержка форм Microsoft InfoPath®



Wonderware Skelta BPM

Выполнение процесса

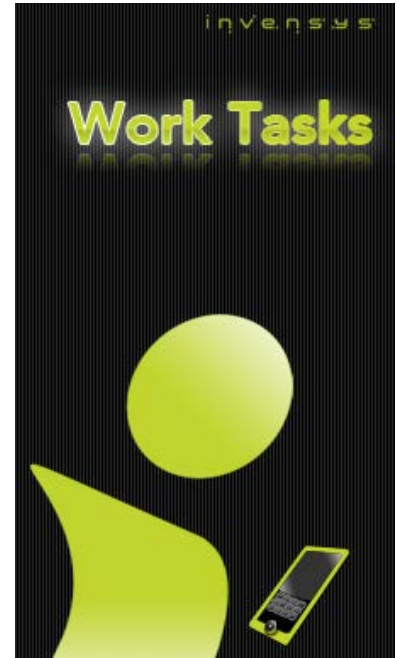
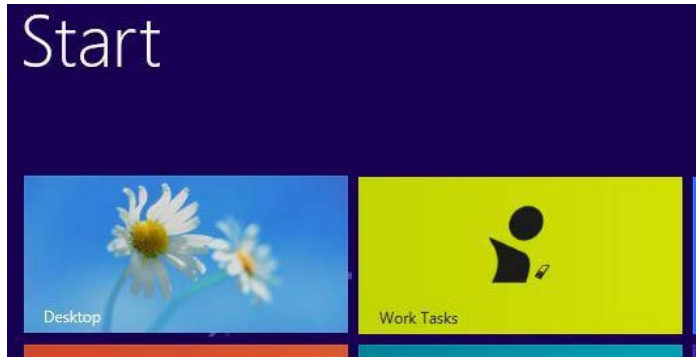
- Выполнение задач интегрировано с приложениями нашего портфолио
- Конечные пользователи взаимодействуют с задачами рабочего процесса через Wonderware InTouch, веб-браузер, смартфоны, электронную почту, SMS и мессенджеры
- Эскалация задач
- Комплексная интеграция с Microsoft Outlook
- Возможности интеграции со сторонними приложениями



Multiple Communications Channels

Мобильность – рабочие задачи

- Поддержка iOS и Windows 8.x планшетов
- Поддержка управления из форм





Wonderware Skelta BPM

Анализ процесса

Мониторинг активности (BAM)

- Визуализация процессов и их связей
- Отчеты и диаграммы «из коробки»
- Настраиваемые показатели (KPIs)
- Привязка событий процесса к событиям BAM
- Проактивные предупреждения о поведении ключевых показателей (KPIs)

The image displays two screenshots of the Wonderware Skelta BPM Enterprise Console interface.

The top screenshot shows the "Enterprise Console" with the "Reports" tab selected. It displays "Global Reports" and "Details of All Executing Workflows". The table lists workflow instances with columns: Instance Id, Name, Version, Status, User Name, Started On, Updated On, Ended On, and Host Name. A table below shows details for a specific workflow instance, including Activity Name, Activity Type, Action Status, Assigned On, Updated On, Ended On, Host Name, Channel Name, TransactionType, Actor, Queue Name, To Actor, Started On, Executed On, and WorkflowId.

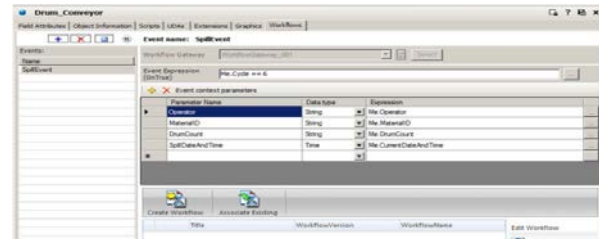
The bottom screenshot shows the "Enterprise Console" with the "Workflows" tab selected. It displays a list of workflows with columns: Title and Description. A "New BAM Workflow" dialog box is open, showing fields for Title, Description, Associate to BAM Event, Workflow, Based On, Effective From, and Effective To. The "Based On" dropdown is set to "KPI Analysis". The "Effective From" date is 9/1/2014 and the "Effective To" date is 9/30/2014. A "Save & Continue" button is at the bottom right.

Wonderware Skelta BPM

Коннекторы

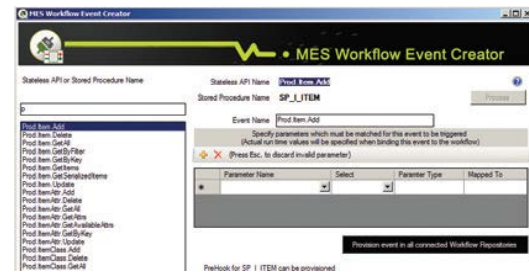
Коннектор Wonderware System Platform

- Расширяет стандартные объекты в IDE закладкой workflow для конфигурирования событий процесса
- Обеспечивает интеграцию редактора процессов и IDE
- Предоставляет шаблоны ArchestrA графики для визуализации доставки заданий и отклика



Wonderware MES коннектор

- Обеспечивает возможность бизнес-процессам взаимодействовать с MES middleware, а также получать данные
- Позволяет событиям MES middleware инициировать процессы



EAM - коннектор

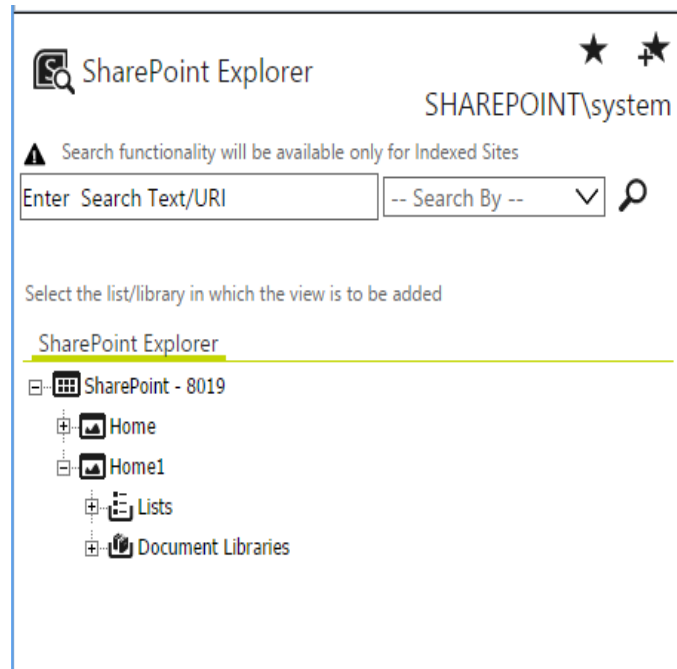
- Предоставляет возможность InteltraTrac инициировать процесс

Wonderware Skelta BPM

Коннекторы

SharePoint 2013 коннектор

- Включает формы для просмотра данных из SharePoint 2013
- Создание документа Office 2013 с переменными процесса и размещение его на сайте SharePoint
- Контекстная привязка процесса и использование отчетов
- Интеграция SharePoint и Workflow – вызов процесса Wonderware Skelta BPM из SharePoint 2010 и 2013
- Возможность ручного запуска процесса Wonderware Skelta BPM из листа SharePoint



Wonderware Skelta BPM

BPM- встроенные примеры применения



SCADA/HMI - приложения

- Обработка тревог
- Электронные инструкции
- Логика HMI, основанная на модели



MES - приложения

- Управление спецификациями
- Positive QA Release
- QA Hold Resolution



ERP - приложения

- Приемка материалов
- Утверждение данных
- Синхронизация заказов

BPM -Enabled Applications

HMI Application Examples

- **Operator Alarm Response Management** – Guide operators through a series of actions to resolve a particular alarm condition. If necessary, collaborate with other resources or escalate to a supervisor.
- **Electronic Work Instructions** – Guide operators through standardized and validated processes that have been established for common production activities such as: machine setup, line shutdown, product changeover, etc.
- **Model-Driven HMI Logic** – Leverage the visual modeling capability to eliminate custom script used for defining machine or line process logic at the supervisory level.



BPM -Enabled Applications

MES Application Examples

- **Specification/Recipe Change Management** – Coordinate appropriate resources, enforce the decision making process, communicate the decision back to the stakeholders, update the target applications (e.g. PLM and MES).
- **Positive QA Release** – Compile data from appropriate sources (MES, Historian, etc.), highlight inconsistencies, coordinate reviews or additional actions based on disposition (e.g. release to distribution, hold for QA review).
- **QA Hold Resolution** – Notify resources to review hold condition, coordinate reviews or additional actions based on disposition (e.g. remove hold, return to vendor)
- **Model-Driven Business Rule Management** – Leverage the visual modeling capability to eliminate the custom script or code used for defining classic MES business rules.



BPM -Enabled Applications

ERP Application Examples

- **Material Receiving & Inspection** – Enforce QA sampling plan, highlight information that is out-of-spec, coordinate any additional reviews or actions required to complete the receiving process, send information to ERP application.
- **Master Data Approval** – Coordinate appropriate resources to review master data changes, enforce the plant-level signoff process, update the appropriate applications (e.g. Quality, MES, LIMS, etc.) on the plant floor.
- **Production Order Download Synchronization** – Receive bulk production orders from ERP, apply plant specific business rules to break down the bulk orders into manufacturing orders.
- **Production Order Reconciliation** – Compile production records associated with a production order, coordinate resources to review the records, highlight inconsistencies with the data, capture changes, send reconciled data to ERP.




Skelta BPM in Industrial Operations

● Fujirebio Success Story

- The solution is completely paperless and provides electronic record collection with electronic signatures while maintaining 21 CFR compliance and ISO 9001 and 13485 certification

INDUSTRY: LIFE SCIENCE
Fujirebio Diagnostics, Inc.
www.fdi.com



"The largest benefit of the equipment monitoring system is that we are logging automatically now rather than manually, so it's saving us about 1,100 man hours per year."

Josh Zimmer, Quality Engineer
Fujirebio Diagnostics, Inc.

Fujirebio Diagnostics Implements a Paperless Electronic Initiative for its Biomarker Manufacturing

Goals	Results
<ul style="list-style-type: none">• To replace an existing paper-based GMP record system and manual process with an electronic monitoring system	<ul style="list-style-type: none">• The company's Electronic Initiative helps produce 75 million tests that are distributed throughout the world• The solution is completely paperless and provides electronic record collection with electronic signatures while maintaining 21 CFR compliance and ISO 9001 and 13485 certification• The equipment monitoring system saves about 1,100 man hours per year• The tasks related to manually logging equipment parameters and reviewing
Challenges	
<ul style="list-style-type: none">• A significant amount of time is spent each day manually reviewing reports• The existing paper-based system was time-consuming and vulnerable to reporting errors• A new system must enable the company to remain in compliance with federal regulation	<ul style="list-style-type: none">• Manual data entry - eliminated and has time from 15+ hours
Enhancements and Benefits	<ul style="list-style-type: none">• as 2/3 of time, or h in quality assurance

underware
by Schneider Electric

 Josh Zimmer, Quality Engineer Fujirebio Diagnostics, Inc.

“ The largest benefit of the equipment monitoring system is that we are logging automatically now rather than manually, so it's saving us about 1,100 man hours per year. ”

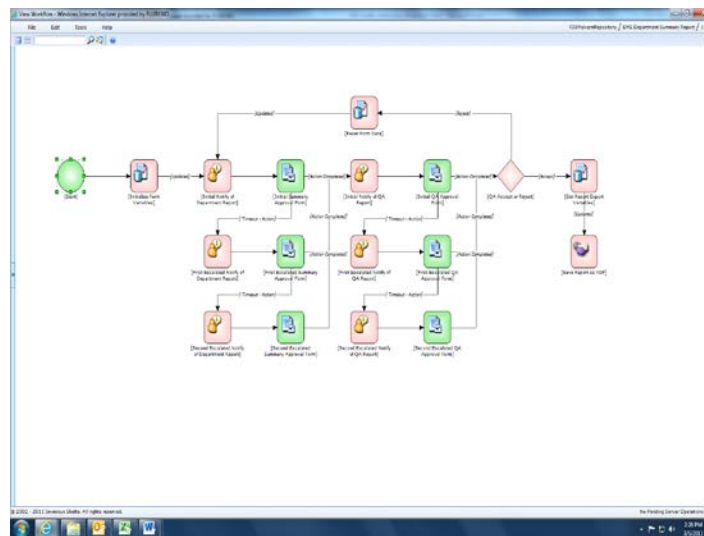
Fujirebio Diagnostics, Inc. provides innovative solutions in clinical diagnostics. with products in support of cancer biomarkers.



Environmental Monitoring System

Objectives:

- ✓ Allow personnel to *monitor equipment* from their Workstations
- ✓ Maintain all temperature readings in *electronic records*
- ✓ Generate electronic GMP reports for “*review by exception*”
- ✓ Provide authorized personnel *electronic signature* capabilities to approve reports
- ✓ *Notify authorized personnel* in event of adverse temp trends
- ✓ *Reduce* current paper-based logging effort
(now over 1100 hrs./y)
- ✓ Implement an *Operations Information Infrastructure* to *simplify* future “electronic initiative” projects



Wonderware Skelta BPM

For any industry, any role in an organization

❖ Applicable industries include...

Upstream Oil & Gas, HPI, Power & Energy, Metals, Minerals & Mining, Pulp & Paper, Food & Beverage, CPG, Discrete/High Tech, Specialty Chemical, Life Sciences, Infrastructure

❖ Whether you are...

An existing Invensys customer or new customer. Supports your role within the organization for collaboration, standards, and enforcement:

- Engineering
- Maintenance
- Operations
- Plant Management
- Quality Assurance

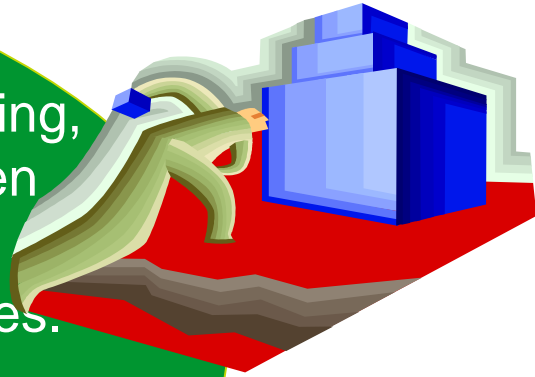


Wonderware Skelta BPM

Supports Your Strategic Initiatives

Many of our customers have strategic initiatives active within their organization (Lean Manufacturing, Quality & Regulatory Compliance, Demand-Driven Manufacturing, etc.)

- These strategic initiatives have multiple objectives. Typically, these objectives create new business policies and processes that need to be executed and measured
- Wonderware Skelta BPM can be the enabling framework for managing your initiatives



Customer Proof Points

Power Industry



Background

- Customer was looking to implement an Avantis Enterprise Asset Management (EAM) solution
- As part of executing maintenance work orders, customer wants to implement a rigorous process around **lock-out/tag-out** (LOTO) activities

Proposed Solution

- Extend Avantis workflow capability with Wonderware Skelta BPM
- Desired lock-out/tag-out process would be modeled in Wonderware Skelta BPM to coordinate resources from different domains (e.g. maintenance, operations) when a maintenance work order is released from Avantis

Benefits

- Consistent and safe execution of lock-out/tag-out process
- Visibility to lock-out/tag-out process
- Complete genealogy of lock-out/tag-out process

Customer Proof Points

Automotive Industry



Background

- Customer currently employs Wonderware System Platform
- Customer wants to employ a **quality approval process** within their paint shop to ensure that paint lots have been properly authorized for use in production

Proposed Solution

- Extend Wonderware System Platform and MES solution with Wonderware Skelta BPM
- Desired quality approval process and associated data entry forms would be modeled in Wonderware Skelta BPM
- Approval process for each paint lot would be manually invoked by QA resource

Benefits

- Complete genealogy of quality approval process for each paint lot
- Ensures consistent and compliant execution

Customer Proof Points

Chemical Industry



Background

- Customer currently employs Wonderware System Platform and MES Operations & Performance
- Customer has several layers of systems, procedures, training, and management controls that are used to ensure safe and reliable operations
- Customer wants to employ single process execution and coordination framework to **manage normal and abnormal events** across all systems

Proposed Solution

- Using Wonderware Skelta BPM, created a composite application that receives and processes normal and abnormal events from System Platform, MES/Operations & Performance, and legacy applications

Benefits

- Respond faster to process issues
- Facilitate high velocity collaboration of subject matter experts
- Increase retention and sustainability of knowledge

Customer Proof Points

Food Industry

Background

- Customer currently employs Wonderware InTouch for process visualization and a 3rd party OEE (Overall Equipment Effectiveness) application for asset performance
- Customer wants to monitor asset performance KPIs (e.g. x minutes of downtime have been exceed within a shift) to determine necessary course of action when predefined thresholds have been exceeded (e.g. create maintenance work order request in SAP, change operating conditions, etc.)

Proposed Solution

- Configure a series of workflows in Wonderware Skelta BPM to monitor asset performance KPIs exposed in the 3rd party OEE application
- Provide a genealogy report that illustrates how each KPI excursion was managed on a per line, per product, per shift basis

Benefits

- Drive consistent response to KPI excursions
- Increases asset availability and performance through proactive event management

Customer Proof Points

Consumer Products Industry

Background

- Customer currently employs Wonderware System Platform and MES/Operations
- Customer is concerned about the accuracy of data being collected on the plant floor during production (e.g. material consumption, labor allocation, etc.) and wants to review and approve suspect production-related data before it gets transmitted to SAP ERP

Proposed Solution

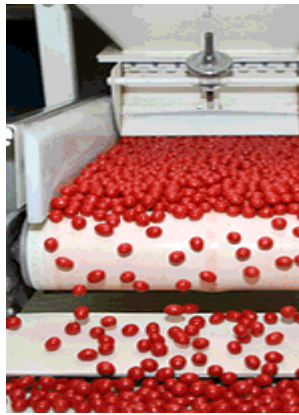
- Configure a production order reconciliation workflow in Wonderware Skelta BPM that looks for inconsistencies in production-related data and invokes designated resources to resolve data conflicts
- Leverage the Wonderware MES Software Connector to initiate the production order reconciliation process, as well as facilitate the reconciliation process

Benefits

- Ensures accurate data is being transmitted to SAP

Customer Proof Points

Food Industry



Background

- Customer currently employs ArchestrA System Platform and WW MES/Performance
- Customer wants to manage and track various phases of a product changeover, including both automated and operator initiated acknowledgements

Proposed Solution

- Configure a product changeover workflow in ArchestrA Workflow Software that coordinates various team members and captures automated and operator-initiated acknowledgements to ensure that changeover activities have been executed in the proper sequence
- Provide a genealogy report that illustrates how each product changeover was executed on a per line, per product basis

Benefits

- Effectively coordinates product changeover activities
- Ensures changeover activities were executed in a compliant manner

Спасибо!



by Schneider Electric

www.wonderware.ru

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