Off-the-shelf Packaged Software Systems And Custom Software Analysis

By Gamal Balady
MASS Group, Inc.

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Presentation Overview

I. Packaged Software Systems vs. Custom Software Systems
II. Trends
III. Comparison Of Packaged And Custom Software Systems
IV. Benefits of A Packaged Software System

IV. FactoryLink SCADA/HMI
V. FactoryLink Broad Industry Support
VI. FactoryLink Standards Based
VII. FactoryLink Features
VIII. Standard Device Interfaces
IX. Topologies
X. Object Oriented
XI. FactoryLink Benefits
Who is MASS Group?

Mass Group produces and distributes high technology, open systems software products to industrial automation and manufacturing markets that require a high degree of reliability, quality assurance and automated enterprise class solutions.
Industry Experience and Clients

MASS Group clients are among the FORTUNE 1000 manufacturing companies including:

Boeing, Applied Materials, Kingston Technology, Hewlett Packard, Southern California Edison, L.A. County Sanitation as well as other small and mid-size manufacturers.
Trends In Enterprise Software Systems

- Move Toward Applications Platforms With Open Extensible Architectures and Plug-in Components That Facilitate Communication Across The Enterprise

- Reduction In Systems Costs While Increasing Intelligence, Analysis, Interoperability and Performance
Packaged Software Systems vs. Custom Systems

Custom Software Functionality

- Custom Vertical Software – Highly Customizable Application Specific Solutions Provide Specific Tools, Reporting, and Compliance
# Packaged Software Systems vs. Custom Systems Comparison

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<th>Packaged Systems</th>
<th>Custom Systems</th>
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| Higher Initial Costs  
Must Acquire Packaged System | Lower Initial Costs |
| Lower Development Costs  
Many Features, Less System Configuration and Customization | Increased Development Costs  
Must Start From Scratch |
| Faster Project Implementation  
Decreased Development Time | Slower Project Implementation Time  
Increased Development Time |
| Increased Reliability  
Over the Product Lifecycle  
Periodic Upgrades, Patches, Maintenance | High Reliability Requires Increased In-house Development, System Maintenance, Upgrades, and Testing |
| Standard Data Exchange and Communications Technologies | May Not Fully Support Industry Standards  
Limiting Data Exchange and Communication With Other Enterprise Systems |
| Decreased Training Requirements | Requires Course Material and Extensive Knowledge of Proprietary Systems Functions |
Benefits Of A Packaged System

- Acquisition and Development Costs
- Faster Project Implementation
- Increased Reliability Over the Product Lifecycle
- Standard Data Exchange and Communications Technologies
- Decreased Training Requirements
Acquisition and Development Costs

- Higher acquisition costs offset by reduced development costs
- Decreased time to market due to faster implementation can reduce costs and meet project timelines
Faster Project Implementation

- Less custom programming, less testing
- Experienced pool of software developers with hands-on real-world application development expertise
Increased Reliability Over the Product Lifecycle

- High Quality industry proven best of breed applications tested in hundreds of real-world installs across multiple industries
- Support Services
  - Periodic incremental updates, patches and upgrades
  - Technical support network, phone, onsite, email
Standard Data Exchange and Communications Technologies

- Improve engineering, production, quality control and supply chain management by interfacing with enterprise systems
- Provides collaborative engineering, web-based data, remote monitoring, data collection, supply chain visibility
A Packaged System - FactoryLink SCADA/HMI
Supervisory Control and Data Acquisition/Human Machine Interface (SCADA/HMI) software for process knowledge and control.
A Packaged System - FactoryLink SCADA/HMI

Broad Range of Industrial Support Can Be Used In Many Mission Critical Applications

- Aerospace
- Automotive
- Building Automation
- Electronics Assembly
- Electricity Generation, Transmission
- Pharmaceuticals
- Semiconductor
- Transportation

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A Packaged System - FactoryLink SCADA/HMI
Standards Based Product For Data Exchange and Communication With Enterprise Systems

- Microsoft Windows (2000, XP, ....)
- Windows Terminal Services
- OPC (Client and Server)
- ActiveX
- ODBC
- Microsoft Visual Basic
- C++
- Microsoft SQL Server
- .NET

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Benefits of A Packaged System – FactoryLink

System provides standard features that are not available without extensive customization of a custom system

FactoryLink Functionality Overview

- Supervisory control and data acquisition (SCADA)
- Human Machine Interface (HMI)
- Alarms and Events
- Real-time and Historical Trending
- Statistical Process Control
- Historical Data Logging
- Operator Event Log
- Reporting
- Scripting
- Interfaces to PLCs, RTUs, and other control equipment using OPC or device-specific protocols. Interfaces to over 600 devices
- Interfaces to business systems using XML or database interfaces
Standard Systems - Open Software Bus

- FactoryLink supplies a standard framework that can be used to build vertical applications in a large variety of industries.

- The Patented Open Software Bus provides a global, real-time database.

- All tasks (programs) have access to all real-time data.
Standard Data Exchange and Communications Technologies

**FactoryLink .NET Client**

- The FactoryLink .NET client supports access from the client to the server application across any TCP/IP connection, such as public Internet, LAN, or WAN.

- Client Builder uses Microsoft’s new .Net services to communicate through firewalls using Web Services, HTTP, and SOAP.
Topologies – A Scalable Solution

Single Station

Multi-Station

Distributed Architecture

Redundant Systems

1 to n workstations

Integrated servers and communications
Rich or Thin Clients

Thin Client

- Thin Client Using Windows Terminal Services
- FactoryLink .NET Client

Full Run-time Only Client

Full Development Client

Rich Clients

- Full Development or Run-time Only System (Server + Client)

LAN, WAN, Dialup, or VPN
Object Oriented Configuration Tools Extend Systems Functionality

- Client Builder
- Configuration Explorer
  - Both are object oriented
  - Children inherit from parent
  - Re-usable objects
  - Build your own without special APIs
Standard Device Interfaces - OPC

- OPC technology eliminates expensive custom interfaces and drivers while improving information exchange at various levels of the enterprise that use different solutions, platforms.

- Reduces costs, faster development and promotes increased operating efficiency.
Standard Device Interfaces - OPC

OPC Benefits
- Eliminate custom interfaces and drivers
- Write one software component instead of multiple drivers
- Create re-usable modules
- Communicate data locally over the enterprise network
- Communicate data remotely over the internet
Standard Device Interfaces - OPC

- OPC specifications support interoperability amongst different computing platforms and the technology is proven in hundreds of plants and thousands of applications.

- Standards such as XML and SOAP are being utilized in support of data transfer over the Internet.
Standard Device Interfaces - OPC

- FactoryLink includes an enhanced OPC Client (ODX) that eliminates the need to purchase a proprietary Device Interface in many systems. This feature reduces the cost of the software and ensures the use of a standard protocol, making the system easier to maintain and upgrade.
Benefits Of A Packaged System - FactoryLink

- Runs on Standard Operating Systems Windows,
- Supports Multiple Standard Industrial Functions
- Universal Support for Devices via OPC
- Standardized Data interchange using XML or ODBC
Benefits Of A Packaged System - FactoryLink

- Powerful – Best of Breed, Feature Rich Solution For Horizontal or Vertical Industries
- Open – Standards Based For Data Exchange With Enterprise Systems
- Scalable – Framework Can Grow To Meet New Industries Challenges By Adding, Components, Plug-ins
Thank You!

Visit www.massgroup.com for more information.