About IXM One

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At Grassfish, we constantly develop innovative products for the dynamic management of digital signage networks. We operate on the cutting edge of technology and our solutions have a proven track record in large-scale, international projects.

We bring IT and marketing experts together to combine the best of both worlds and deliver excellent software, interactive solutions, and consulting services. We develop our products with the explicit goal of making them as easy as possible to use without time-consuming training or long implementation times.

Our future-proof solutions fully integrate into mobile communication and business intelligence applications. We develop our software with the specific goal of addressing the ever more stringent requirements placed on branding and corporate communications today. Grassfish combines state of the art data management with dynamic, fully integrated communication via public screen and tablet networks. Our customizable, highly secure system architecture is ideally suited for corporate and marketing communications in large organisations: scalable and incrementally expandable. You can adapt our system to your changing requirements at any time.

IXM One

With IXM One, Grassfish offers the innovative software of choice for large retail and corporate communication projects. It is one of the few products available that has been proven to be a stable solution for large digital signage projects and a best-fit for today's advanced requirements in large organisations. Managing an unparalleled set of different output devices, IXM One also integrates easily in a professional IT landscape. Due to its highly flexible structure, it adapts to the customer's organization - from centralized projects to multi-level retail implementations with editorial responsibilities at the head quarter, the country organization, and the dealership level.
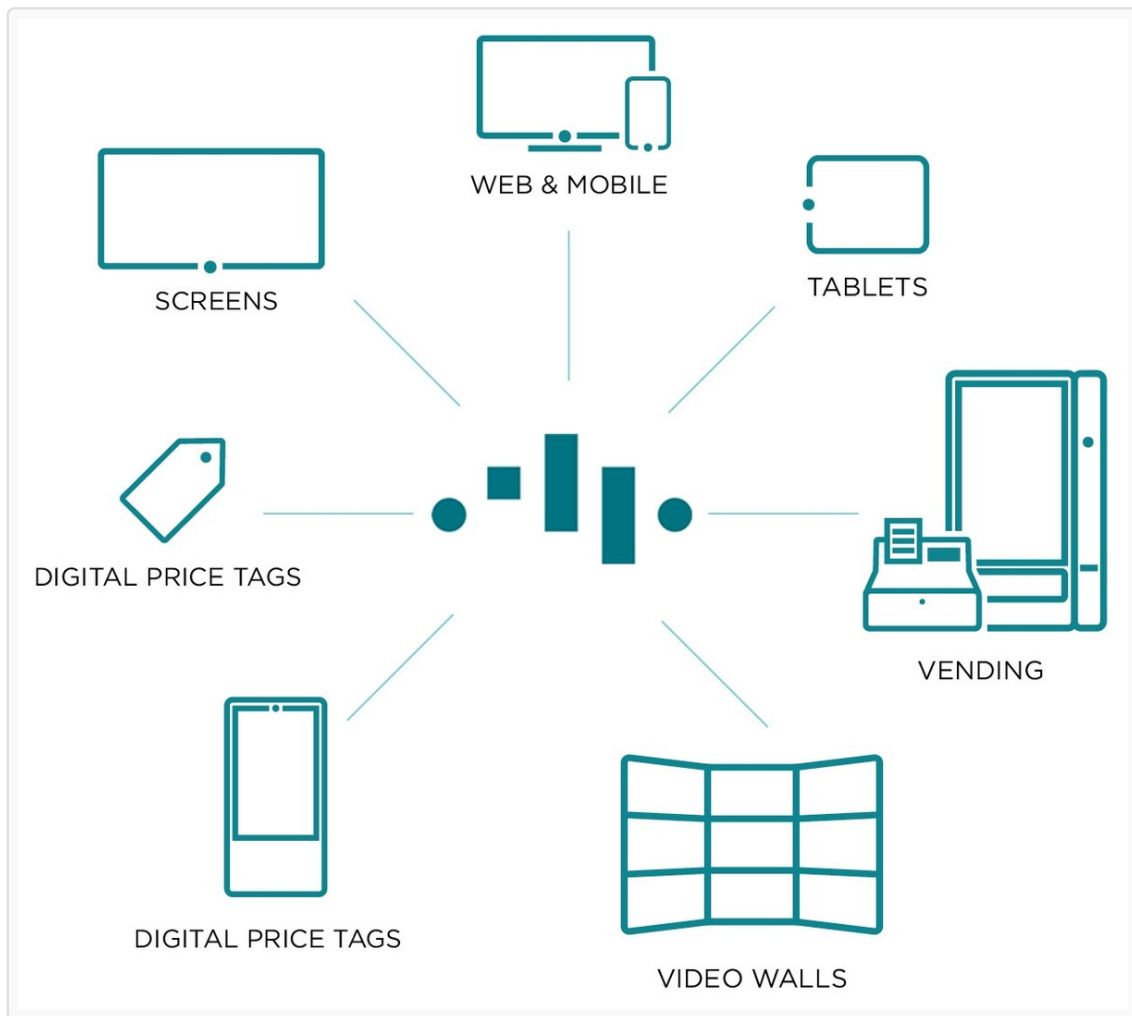
Usability

The focus of the software is simple and fast usability combined with high functionality. To achieve this, it provides the following features:

- Attractive web based HTML5 user interface

- Intuitive graphical CMS with drag and drop features

- Support for various browsers and operating systems (MS Windows, Mac OS, Linux)

- Well-arranged user interface adapting to each user's access permissions

- Strict separation between system structure management and daily editorial work

- Multi-language support including Chinese, Cyrillic, Japanese, Hebrew, and Arabic character sets

Dynamic content management

Our software enables dynamic content management through the following features:

- Easy content handling via drag and drop

- Graphical representation of content and playlists

- Flexible setting of play-out rules for spots and playlists:

  ◦ Time range, weekdays, time of day

  ◦ Marketing attributes (such as product line, store type, demographics)

  ◦ Regional attributes

  ◦ Fall-back content to avoid black screens

  ◦ Priority rules to overrule standard content in case of special events

  ◦ Externally triggered dynamic content (such as controlled by audience measurement systems, age group and gender, sensors, RFID readers, and more)

- Configurable control via:

  ◦ Playlists (specified content sequence or random order)

  ◦ Content pools (such as two spots from pool A, then one spot from pool B)

  ◦ Slots (common in advertising, like 6 slots filled at different levels)

- Extensive administration functions:

  ◦ Automated generation of playlists

  ◦ Copying of content between playlists

  ◦ Preview for spots, playlists, and screens

  ◦ Release workflows

Flexible output devices and screen layouts

By using a variety of player technologies, we support the following screen layouts:

- Portrait and landscape mode

- All screen formats and arrangements

- Video walls

- Full screen and split screen

- 4K resolutions and special formats (such as stretch displays)

- Flexible, visually appealing spot transitions (such as fly, seamless, crossfade, and more) between all content types (such as videos, HTML content, Composer spots, websites, and more)

- Overlays (logos, time, and more)
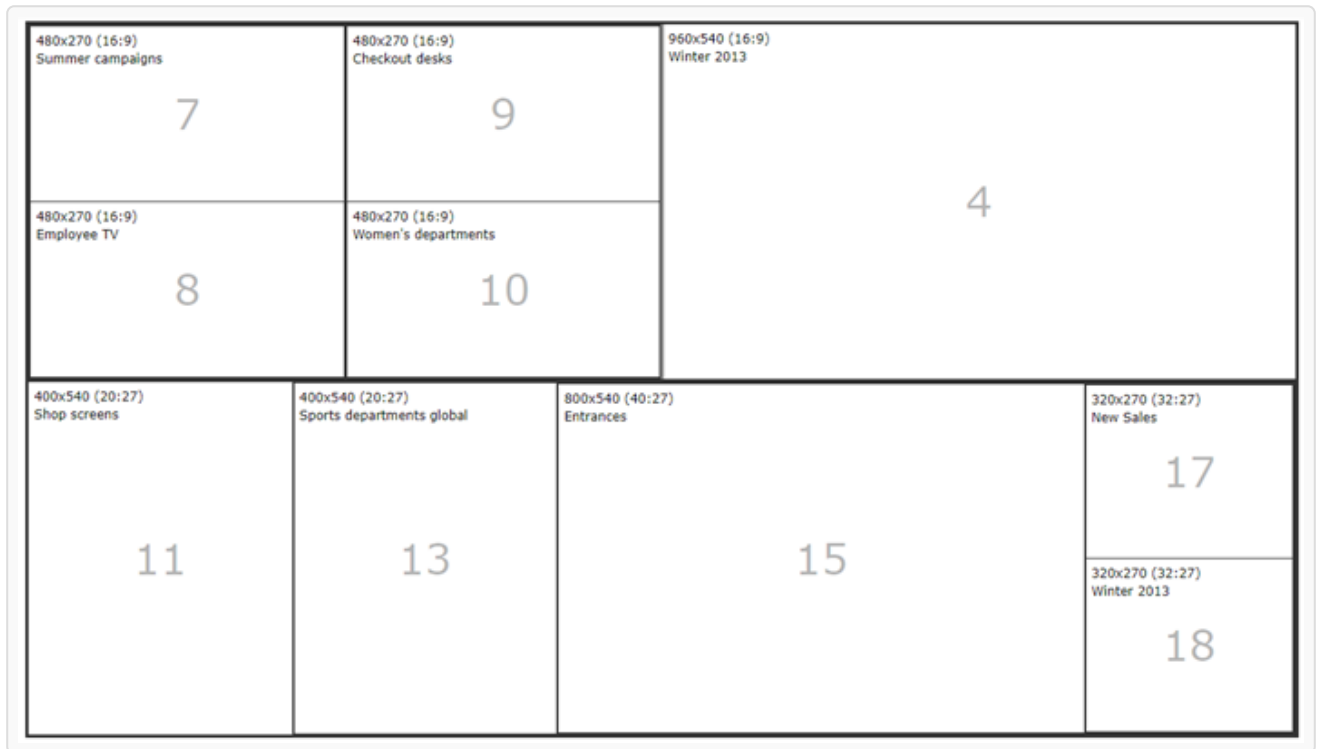
Extensive media asset management

IXM One supports extensive media management via the following functions:

- Broad range of supported media formats such as:

    ◦ Videos (AVI, MP4, and more)

    ◦ Images (JPEG, BMP, TIFF, GIF, and more)

    ◦ Audio (MP3)

    ◦ Websites (HTML5) with preloading and whitelists

    ◦ Local HTML5 content

    ◦ Composer (integrated HTML-based spot and template editor)

    ◦ Video streams

    ◦ PDF

    ◦ PPT

    ◦ Text tickers

- Automated generation of thumbnails and preview videos

- Meta information for each media file for controlled media handling:

    ◦ Keywords for searching

    ◦ Validity period (media files can only be used during this period)

◦ Rules to specify where and in which context media files are allowed

◦ Dynamic spot filter rules during playback (for example for audience measurement integration)

• Folder structure to specify access rights

• Versioning of media files and playlists

• Archiving functions

• Management of variants of one content for different languages, countries, or channels

Content and template creation

Grassfish's built-in Composer tool makes it easy for marketing departments and other contributors to create or locally adapt content.
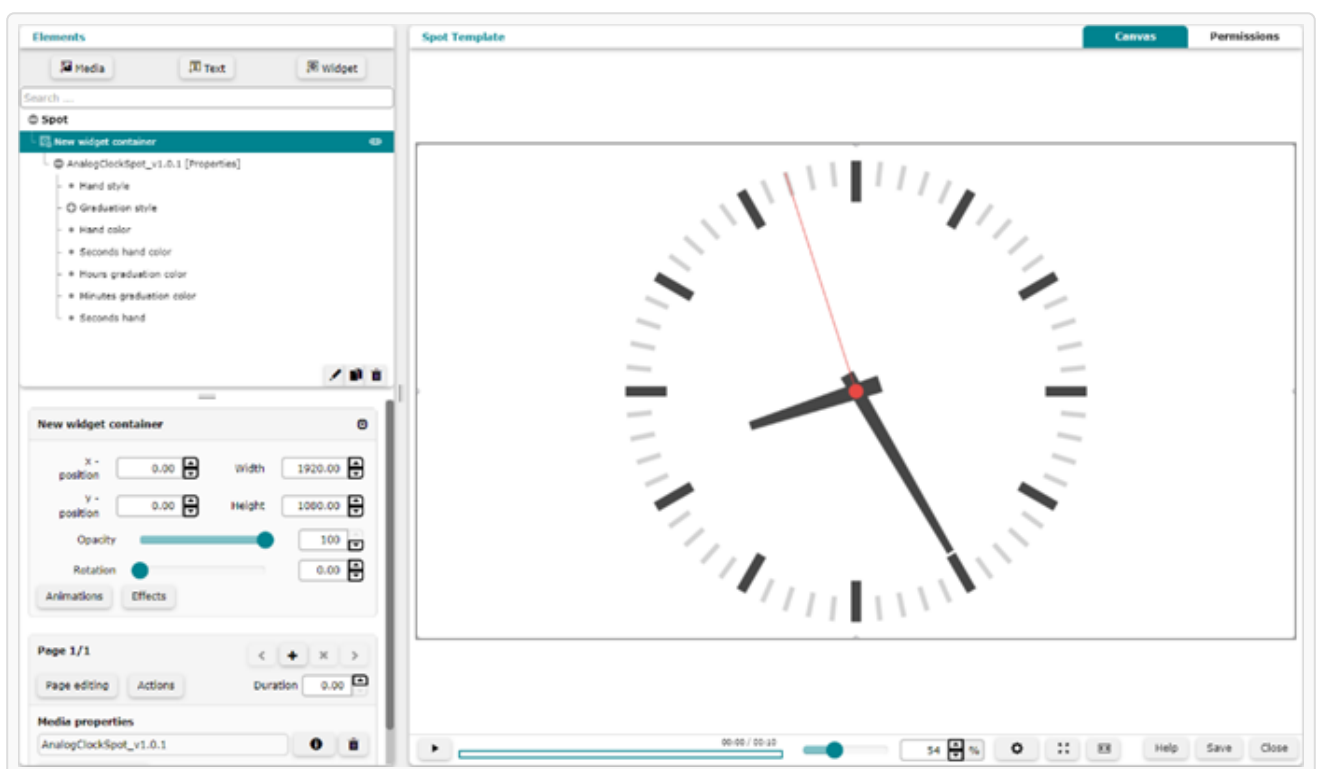
The Composer provides the following features:

• Creation and management of templates

• Control of editing rights to specify who can use which templates and which elements they can edit in them (such as whether fonts and sizes can be changed)

• Management of the central media pool and access to content

• Insertion of dynamic content from your databases into your templates

• Extension of the Composer's capabilities through project-specific widgets

• Generation and maintenance of HTML widgets and HTML templates by customers and their service providers

Data driven dynamic content

IXM One also supports data driven dynamic content with the following features:

- Data interface framework for easy integration of external data (news, weather, stocks, product databases, and more)

- Definition of rules for data distribution based on data properties

- Dynamic data access from templates and interactive applications

- Integration of image and media databases

- Integration of external advertisement sales systems

- Integration of on-site trigger sources (RFID readers, product holders, and more)

- Framework for content creation:

    - Access to external data (product data, and more)

    - Standard reporting interface

    - Heartbeat monitoring

    - Access to information from external sources (audience measurement systems, RFID readers, and more)

    - Content activation

    - Customization rules for the content editor

News

Weather

Interactive application support

Interactive applications are a key element in most Grassfish projects. We support the following functions:

- Support of modern standard technologies:

  ◦ HTML5

  ◦ Integration of external systems (such as authentication or payment systems)

  ◦ Framework for monitoring and generic reporting interface

- Customizable app selector on end devices

- Content control via tablets (2nd-screen applications)

- Content control via sensors (such as Lift&Learn applications)

- Control of light and audio systems

Organization and workflow support

Extensive user rights management

IXM One supports extensive user rights management:

- Detailed specification of access rights on functional and data levels

- Specification of user rights for:

  ◦ Location management

- Content pool

- Playlists and playlist definition

- Workflows

- Meta information

Workflow support

Grassfish software supports your workflow in the following ways:

- Easy assignment of the right content to the right place, even in very complex organizational structures

- Extensive permission management options to suit your specific organizational structure and hierarchy

- Selective access to content for multi-tier and distributed editorial teams

- Changelogs for transparency (which changes were made to content and locations by whom and when)

- Version keeping for content and playlists

- Approval workflow for content creation and playlist changes

- LDAP/Active directory support

Real-time monitoring and reporting

With IXM One, you can keep track of all important developments using the following features:

- Central dashboard showing error conditions with e-mail notifications

- Monitoring of server environment and services

- Monitoring of player conditions:

  - Communication

  - Player hardware

  - Screen

  - Content

  - Interactive applications

  - Proactive monitoring

Target-oriented content (smart signage)

The Grassfish system provides the capabilities to turn a digital signage system into a smart signage system. Smart signage means that content is not statically defined in a playlist but calculated based on external information on the target groups. IXM One allow you to assign target groups (tags) to contents and locations. With these tags, the contents are dynamically assigned to locations. Additionally, you can use "live tags" to specify in real time which content from the assigned pool should be displayed.

Real-time content scheduling

With "live tags", the content/promotion loop automatically adapts in real time. IXM One can select content based on information that it receives from external systems like data feeds or sensors such as:

- Age group or gender (data coming from a camera-based audience measurement system)

- Customer clustering (attributes coming from the POS system, providing information to set up-selling promotions)

- Weather (data feed from the weather data provider)

For each content, you can set attributes such as, for example, "49 years+" or "Keno customer". The system uses these attributes during playback to match the trigger information that it receives.

Analytics and ROI

In the standard configuration, the Grassfish system provides the following playback and proof-of-play information:

- Number of playbacks for each content per day and screen

- Exact time of each playback (optional)

- Use of interactive applications and sensors

If you use external triggers such as audience measurement systems, IXM One can also report on data from these systems and information on the selected content.

For interactive applications, Grassfish provides a framework that allows the interactive applications to transmit usage data in a standardized way.

Camera-based analytics tools allow you to analyse viewers. For example, the number of people looking at the screen, age, gender, or duration. This information can be matched with the displayed content to provide information about the impact of specific content.

Scalable and secure system

The Grassfish system is scalable and secure. It consists of the following components:

- IXM One: controls the content on the display

- Grassfish Player: displays the contents on the screen network

- External data suppliers (optional): project-specific interfaces, for example, for delivering weather data, news or room booking information

The system structure is built as follows:

- Scalable from single server implementations up to distributed server cluster structures supporting tens of thousands of end devices

- Unlimited number of concurrent users

- Microsoft-based server architecture

- Professional MS SQL Server database

- Support of virtual server architectures and cloud services

- Optional hosting on Microsoft Azure cloud

- Support of multiple tenants

- High security level on server, player, and communication parts

- Successfully tested in several penetration tests

- Optional secure data transmission

- Customizable password policy rules

- Reporting, proof-of-play:

  - Number of playbacks/activations of interactive applications per day and player

  - Precise evaluation of playback time and place

  - Evaluation of content/template use by editorial teams

Note that the availability of functions depends on the software version, the hardware, and the operating system of the player.