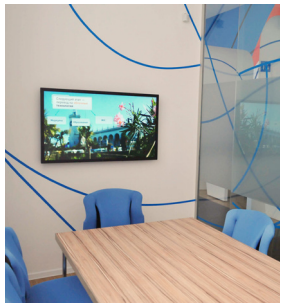
POLYMEDIA
ВИЗУАЛИЗАЦИЯ ИНФОРМАЦИИ

НАЦИОНАЛЬНАЯ ПРЕМИЯ В ОБЛАСТИ ПРОФЕССИОНАЛЬНОГО АУДИО-ВИДЕО ОБОРУДОВАНИЯ И СИСТЕМНОЙ ИНТЕГРАЦИИ
PROIntegration awards

Digital Signage technologies for Rostelecom flagship offices




Project ProIntegration Awards – 2012

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1. Project general description

In the end 2011 Rostelecom announced the dramatical image changeover. One of the consequences is the expansion of the supplied products and services list: the company started promoting not only services but devices under the brand of Rostelecom. In this regard the program of establishing services and sales flagship offices was developed aimed to denote the brand and the service level.

The initial pilot project of Rostelecom flagship office was launched on December 21, 2011 in Ekaterinburg. In June this year three service and sales flagship offices opened in Nizhny Novgorod – on June 5, in Sochi – on June 20 and in Krasnoyarsk – on June 21.

All four offices use the same design concept and the common principles of organization and zoning space of premises developed by the English design agency Start JudgeGill supported by Polymedia which was responsible for developing multimedia part. Technical experts of Polymedia supposed the most appropriate type of display system, monitor sizes, their configuration, decided about wiring, video distribution and system management as a whole. The project assumed some creativity freedom: the concept supposed by English designers included no strict requirements to the technical part - on selecting the equipment Polymedia utilized only its own experience that finally made it successful.

According to the concept of zoning in flagship offices and customer services scenario each office includes Digital Signage system providing distributed broadcasting of multimedia and graphical data to display systems of various sizes, technologies and configurations. C-Nario software is used to control data output, display systems are based on Flame LCD panels and interactive monitors of Finnish company Multitouch. In total about 50 panels are installed in offices and these panels provide access to "Services", "Express service ", "Business", "Home", "School" and "Expo" zones. Convenient negotiations zones equipped with videoconference systems based on American LifeSize equipment are envisaged for corporate clients.

"Our initial aim was that flagship offices project implements the principles which became the basis of our activity after joining the companies in the beginning of 2011 and demonstrates our audience not only achievements in the field of the telecommunication but dips in the future of communication technologies. That is why Polymedia was invited to participate in the project, as its large-scale of integrating visualizing and complex engineering solutions is acknowledged by multiple experts of system integration industry", – says Executive Director - Director of product and marketing department of OJSC "Rostelecom" Rodion Levochka.

Start of works on the project — 11.10.2011.

Implementation — 21.06.2012.

2. Customer's requirements and opinion

- The launch of flagship office should commemorate a new qualitative approach to the service field, transfer to new standards.
- The hardware outfit of the flagship office should allow automatic collection of data from Internet and TV, visualize it on video walls and in multiple windows through developing long-term scenarios of the information demonstration on all or selected monitors, provide the interactive communication with information and remote content control.
- The system should allow high level of convenience in all fields both for the engineers and the clients.
- The flagship office should meet all aesthetic preferences of contemporary users of audiovisual systems.

Opinion

3. Project description

3.1. Description of equipped zones in offices

The English design agency Start JudgeGill was responsible for the architectural concept and design. The specialists of the agency have developed the concept of a sales and services office. According to it there were some requirements to the premise itself, its equipment, locating appliances in it, presenting goods as well as to the specialists which would interact with the clients.

The areas meeting all requirements had been selected in all the cities where the flagship offices were launched. The total area was equal to 400 sq.m., ceiling height - at least 3 m, glass window case occupying all the external wall. The specifics of assumed visitors' pattern of behavior were considered in special area zoning.

The around the clock zone "24 hours" located at the entrance is aimed for implementing any payments: from public services to mobile communication. The central part of the main hall is devoted to "Services" zone - the client can select on its own the formats of communication with a manager - express service or full-scale dialogue - and move to the express service zone and the slow service zone. "Expo" zone includes two long tables with direct goods display and the goods can be tested. You can get consulting services if come up to "expert table" in the same zone. "Home" zone is equipped with two large soft sofas where you can try a new service of the company - an interactive television. "Business" zone includes five equipped negotiation rooms for corporate clients. "School" zone enables getting new engineering and technological knowledge - modern computer room is aimed for teaching all interested ones to PC basics, information search, communication in Internet and using public services portal.

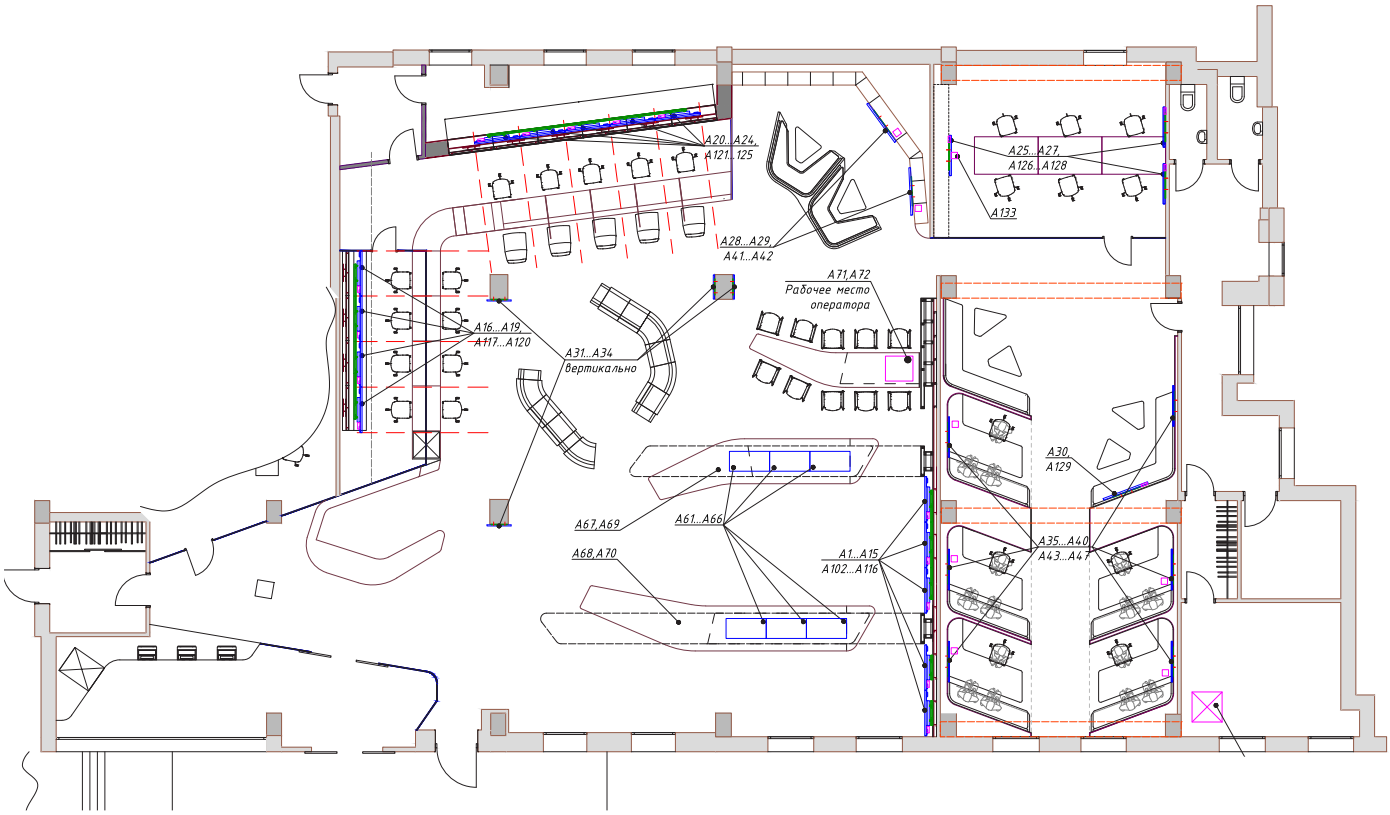

Fig. 1. Equipment plot plan and flagship sales and services office of OJSC "Rostelecom" in Krasnoyarsk.

3.2. Engineering facilities of the flagship office

"Services" zone

Fig. 2. Equipment plot plan in flagship sales and services office of OJSC "Rostelecom" in Krasnoyarsk, "Services" zone

Fig. 3. "Services" zone

Slow servicing and express servicing zones are represented by single row video walls of slim-junction monitors Flame with diagonal 55" in configurations 1*3 and 1*5. The number of monitors is equal to the number of clients' servicing places. Information can be output both to individual panels and to all panels simultaneously in the mode of single image.

“Expo” zone

Fig. 4. Equipment plot plan in flagship sales and services office of OJSC “Rostelecom” in Krasnoyarsk, “Expo” zone

Fig. 5. “Expo” zone

Video wall in configuration 3*7 of thin-junction monitors Flame with diagonal 55” and total intrascreen junction 5.7 mm. Provides bright, dye image even in case of high external illumination. Used to attract attention of clients, inform on goods or services.

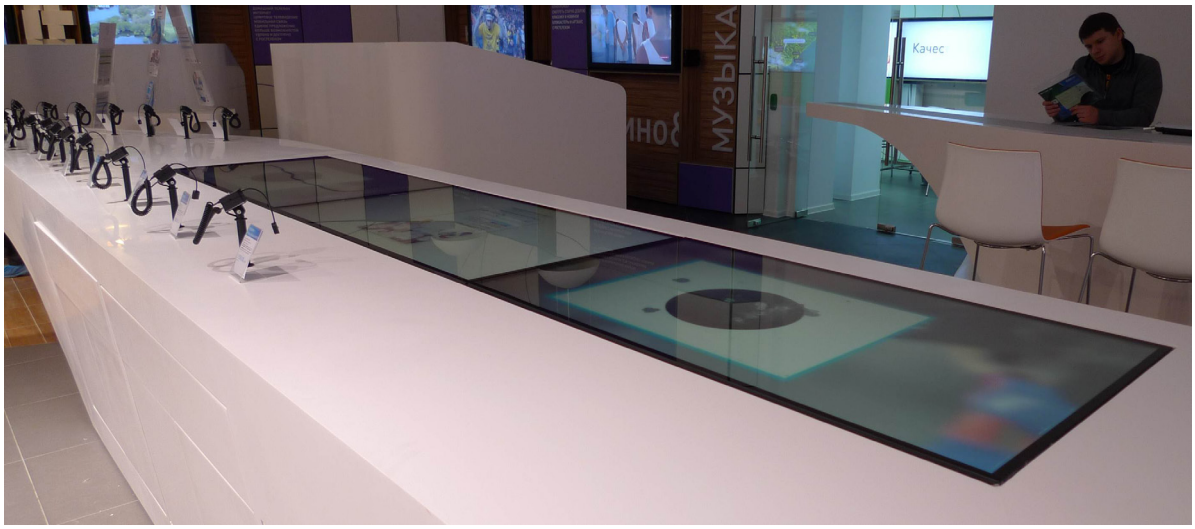

Fig. 6. Appearance of interactive table

Large Expo tables have interactive monitors Multitouch MT467 with diagonal 46″ of configuration 4*1 and 3*1 installed to them. Interactive space of monitors is joined to a single plane and allows simultaneous operation of several users. Table configuration allows installation of panel flush to tabletop avoiding extra clearances and unevenness. Table configuration is complemented with artificial ventilation system that allows maintaining the temperature required for normal operation of panels.

“Home” zone

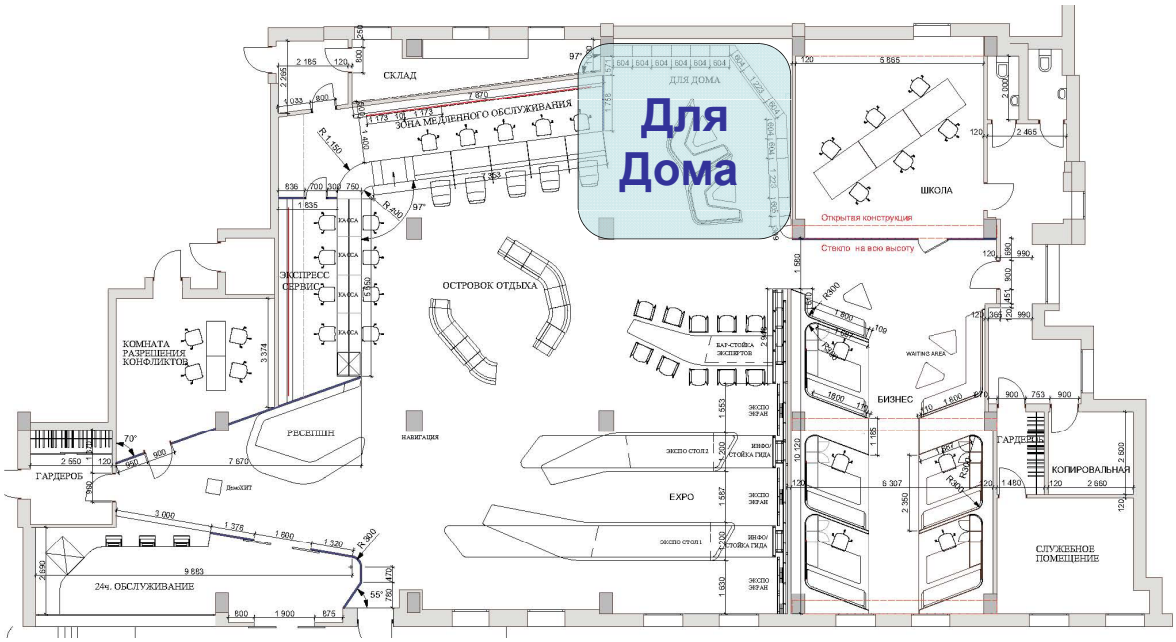

Fig. 7. Equipment plot plan in flagship sales and services office of OJSC “Rostelecom” in Krasnoyarsk, “Home” zone

Fig. 8. “Home” zone

This zone is developed to demonstrate a new service of the company - interactive television. Flame monitors with a diagonal 55” are integrated to furniture to provide the home-effect. These monitors can be used to output advertising matter and to display the broadcasted interactive television.

“Business” zone

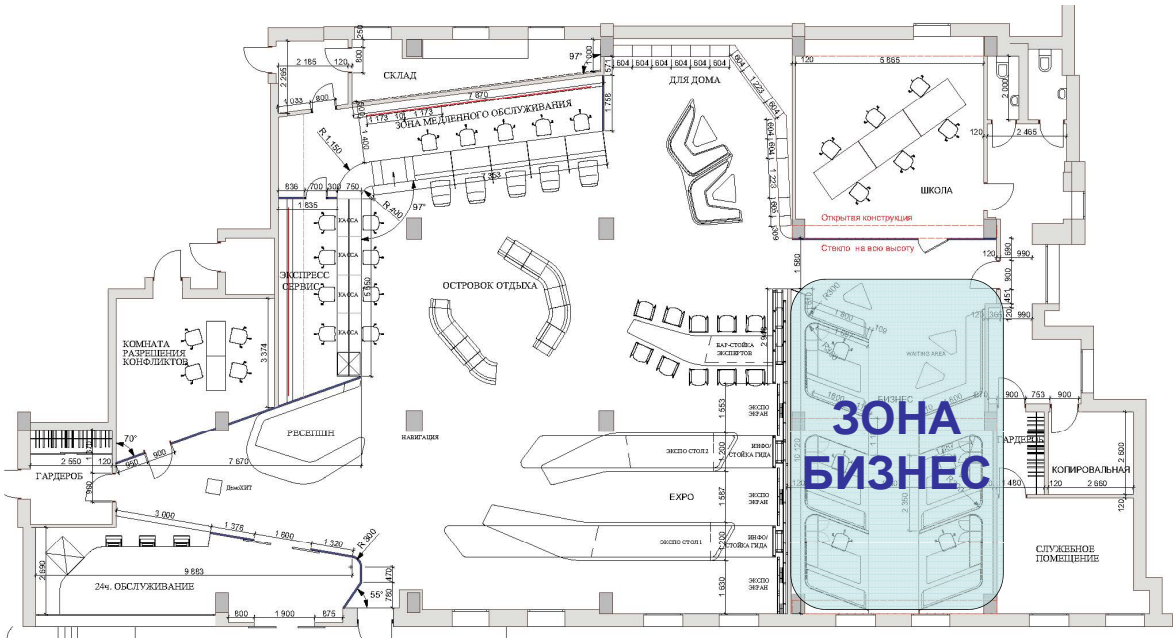

Fig. 9. Equipment plot plan in flagship sales and services office of OJSC “Rostelecom” in Krasnoyarsk, “Business” zone

Fig. 10. “Business” zone

Business zone is intended for corporate clients in individual rooms. Each negotiation room is equipped with Flame monitors with diagonal 46” and videoconferencing system based on the American LifeSize equipment.

“School” zone

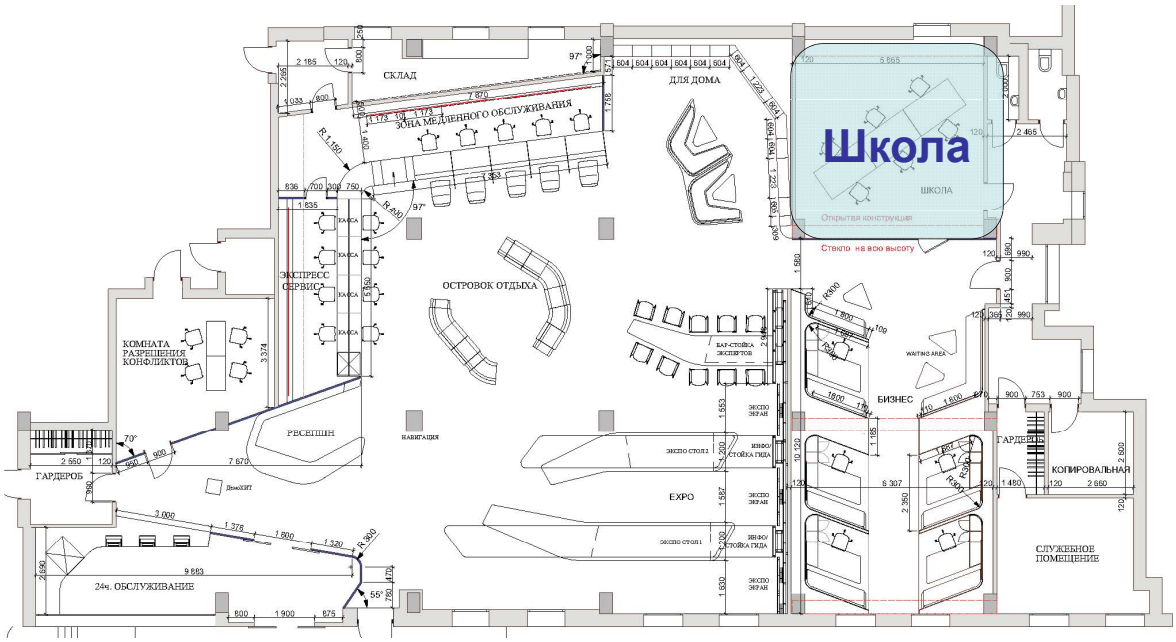

Fig. 11. Equipment plot plan in flagship sales and services office of OJSC “Rostelecom” in Krasnoyarsk, “School” zone

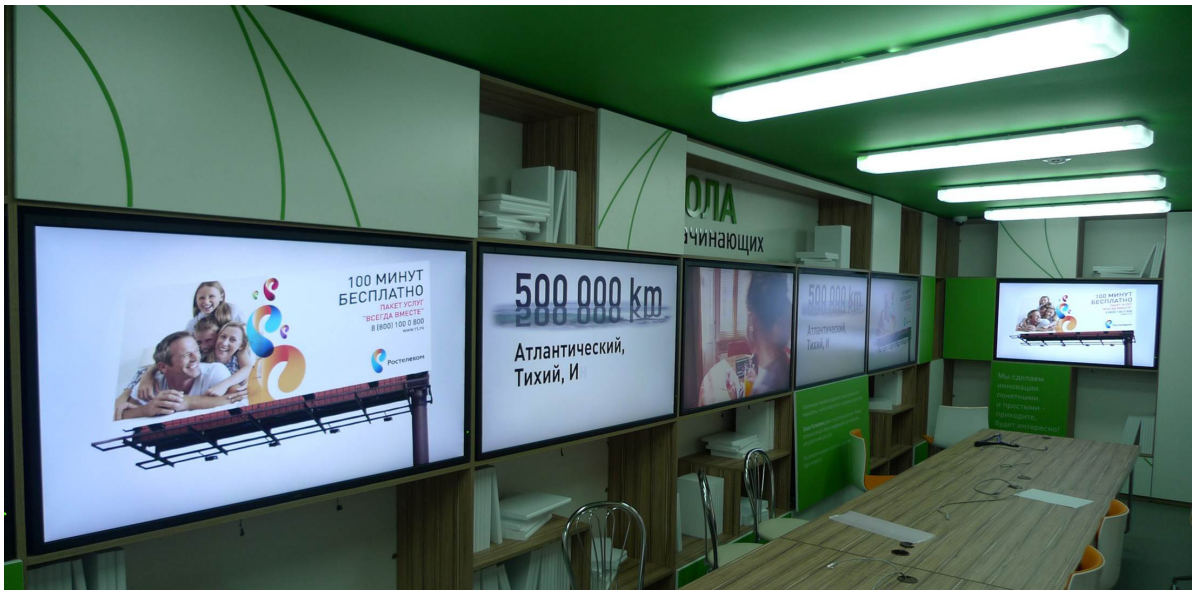

Fig. 12. “School” zone

The zone is represented by a single row video wall of Flame monitors with diagonal 55”.
The content broadcasted to monitors is selected depending on the purposes of training and the contents of the trained group and can be output to each individual panel as well as a single image to all monitors.

3.3. Description of the integrated systems of flagship office

3.3.1. Information display subsystem

Several types of panels were selected as means of display:

1) SNX55LBHa panels made by Flame are used for integration to video wall, these panels apply advanced LCD technology of direct display combining simple and fine design, unprecedented image quality, wide selection of the ways to connect for easy operation of widescreen videowall for various versions of Digital Signage;

2) Professional monitors Flame 55ST, 46ST are used for individual placing and integration to furniture structures, these monitors are widely used including in Digital Signage. These panels combine high resolution Full-HD, IRFM system (prevents occurrence of afterimages), vertical installation option – all this allow use Flame monitor of ST series to develop multifunctional integration solutions.

3.3.2. Integrated control subsystem

Aimed to simplify the work of service personnel the system includes the integrated control subsystem based on Crestron equipment.

Web interface is the user device of the control system.

The interface that contains all necessary means to control the remote equipment - allows operational control, management, monitoring as well as scenario control of systems and subsystems.

In particular the function of quick switching on/switching off the system by means of a single button (macrocommand) is very useful.

The master controller is connected to the local network that allows controlling all equipment both from the control room where the operator's PC is installed and from the reception workstation where only basic functions can be accessed. The operator can monitor the status of the defined system equipment in particular information on switched on/switched off equipment, duration and modes of its operation, etc.

3.3.3. Wiring subsystem

collects, processes, routes and delivers graphical and voice signals from a source to playing means.

3.3.4. Videoconferencing subsystem

installed in "Business" zone aimed for corporate clients to enable videoconferencing on the basis of LifeSize Room 220 equipment with an option of the multipoint videoconferencing in the mode 7+1.

3.3.5. Software subsystem

Output of video content to individual monitors and videowalls is a function of the distributed monitors network software Digital Signage made by C-Nario available on PCs in the server room as well as local display PCs in "Home" and "School" zones.

The signal is transmitted from video information sources (PCs) to monitors both locally and remotely by means of signal transmitters HDMI through twisted-pair.

The server room includes a rack with sources and the C-Nario software program server.

Software system composition:

C-nario Messenger – control module. Responsible for preparing, editing and sending content to playing points as well as implements remote monitoring. Additionally includes Content Integration Package module to treat dynamic information from external sources (databases, sites, XML files). It is installed to a separate workstation which can be accessed by the personnel of the customer authorized to the service the system;

C-nario Multilayer Player – playing module. Responsible for playing content received from C-nario Messenger on a single monitor. Installed to PCs of small form factor Futjitsu;

C-nario Synchronized Player – module of content playing on a group of monitors. Allows joining a group of displays to a common video wall by software means that enable to gain resolution of the whole wall equal to summed resolutions of all displayed matrixes (pixel to pixel). Each monitor in a cross-link requires one license. Installed to HP workstations with professional video cards NVIDIA Quadro NVS 450 (4 DisplayPort) that enables connecting up to 8 monitors to each working station. The programming capabilities of Synchronized Player allow using several working stations to output the common image to the group of the monitors joined to a single video wall, synchronization is implemented by means of local network.

Advantages of this solution:

Right now each system works by itself but if necessary they can be easily joined to a common network controlled from Rostelecom headquarters;

The system is automated to a large extent and allows minimum participation of service personnel. In case of the electrical power interruption the system will be switched on automatically when the power is recovered;

The content being played on monitors is represented by video clips provided by marketing division of Rostelecom. The content as well can be represented by graphical, sound files, text messages, dynamic information from RSS channels, sites, databases.

6. Basic tasks of project, difficulties in implementation

6.1. Purposes of flagship office

- Way to denote the brand
- Modernization of the retail network
- Establishment of presenting site in the region
- Complete the renovation of customer service concept
- Promoting new goods and services in accordance with rebranding
- Ability to present various communication services at a single point.

6.2. Specifics of flagship office project

- Uses brand-new interactive monitors of Finnish company MULTITOUCH installed in "Expo". They enable joining interactive surface providing common interactive space
- Signal is output to monitors by software means that enable avoiding application of expensive video wall controllers
- Content is controlled and edited in the office from the common working station
- In visualization points where the monitors are joined to a form of video wall the installed software enables broadcasting video content both to the whole video wall and to individual displays considering that the resolution of the whole wall is equal to the summed up resolutions of all displays matrixes (pixel to pixel)

6.3. Difficulties in implementation of flagship office project

Brief terms of project implementation. The works on developing the pilot project in Ekaterinburg started on October 11, 2011 and the formal opening of the office was on November 25 — the implementation should take slightly more than a month. The works in Nizhny Novgorod, Sochi and Krasnoyarsk started on April 20 and the flagship offices opened on June 5, 20 and 21 correspondingly.

Territorial distribution of facilities. One of the key tasks was to distribute the specialists on starting and adjustment of equipment in all offices the correct way from the logistics point of view: the works on projects' implementation were held in parallel in different cities greatly distanced one from another as openings of all three offices were close in dates.

Intergrating equipment to furniture According to design project a lot of the equipment should be installed in niches and furniture structures that provided additional difficulties during installation.

7. Project prospective after implementation

Projects in Ekaterinburg, Nizhny Novgorod, Sochi and Krasnoyarsk are the part of a large-scale project to establish a common broadcasting network and have proven to be successful and independent. The projects have proven to be effective. The customer will follow the developed concept of equipping flagship sales offices when expanding its network in all cities of macroregional branches of Rostelecom.

Today every system works on itself but when the number of such systems increases they can be easily joined to a common network with control from Rostelecom headquarters.

Despite the common concept the offices can be customized considering local specifics of some macroregional branches as the projects envisages that the system can be modernized without changing the system core.

8. Contacts

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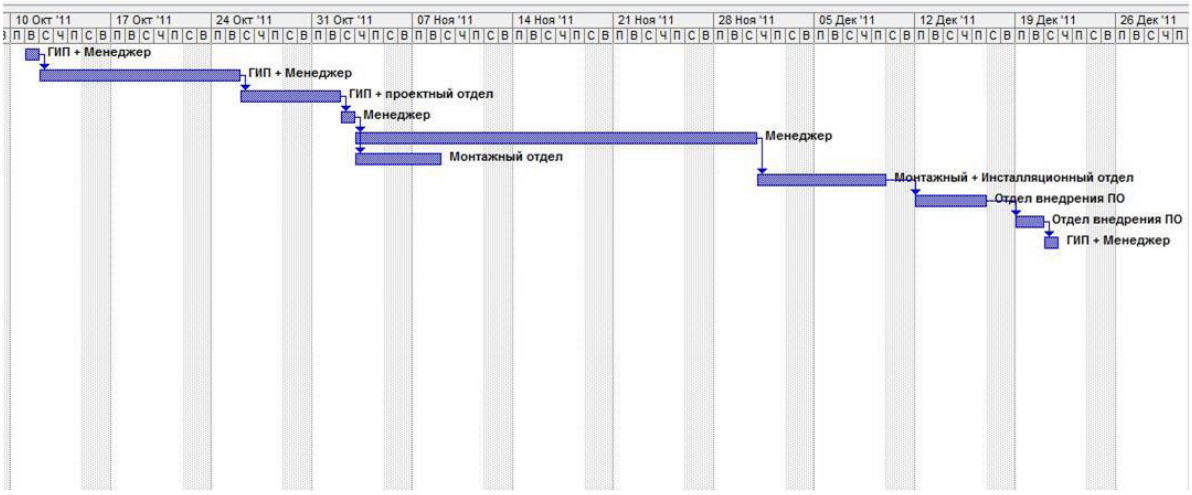
Works schedule for sales and services office of OJSC "Rostelecom" in Ekaterinburg.

	Work stage	Duration	Start	Finish	Forerunners
1	Obtaining initial data from customer	1 day	11.10.2011	11.10.2011	
2	Developing, discussing and improving concept of audiovisual equipment	10 days	12.10.2011	25.10.2011	1
3	Development of design documentation	5 days	26.10.2011	01.11.2011	2
4	Development of commercial proposal	1 day	02.11.2011	02.11.2011	3
5	Search, purchase and delivery of equipment to the facility	20 days	03.11.2011	30.11.2011	4
6	Laying cable passages and installation of embedded elements	4 days	03.11.2011	08.11.2011	4
7	System installation and commissioning	7 days	01.12.2011	09.12.2011	5
8	System programming	5 days	12.12.2011	16.12.2011	7
9	System testing	2 days	19.12.2011	20.12.2011	8
10	Formal opening	1 day	21.12.2011	21.12.2011	9



Technical specification of integrated systems (equipment)

	1. Information display subsystem				
1.1	LCD display, 55", 1920x1080, thin frame (junction 5.7 mm)	SNX55LBHa	Flame	pieces	24
1.2	Video wall mounting (3x3, 3x2)		Polymedia	pieces	1
1.3	Video wall mounting (1x5)		Polymedia	pieces	1
1.4	Operator's system unit	HP Z210SFF	HP	pieces	1
1.5	Widescreen 20"	TFT LA2006x 20" WLED LCD	HP	pieces	1
1.6	Video wall mounting (1x4)		Polymedia	pieces	1
1.7	System unit for cross-linking content display	Z400 Xeon QC W3550	HP	pieces	2
1.8	System unit videocard with four outputs	NVS 450	HP	pieces	4
1.9	LCD display, 46" 46LED, 1920x1080	SLX46LBHa	Flame	pieces	4
1.10	LCD display, 55" 55LED, 1920x1080, thin frame (25.1 mm)	ST-HB55LBX	Flame	pieces	3
1.11	Displays mounting	VLL10	SANUS	pieces	17
1.12	LCD display, 46" with built-in speakers	UE46D5000PW	Samsung	pieces	11
1.13	System miniunit for displays+ operating system	ESPRIMO Q1510	Fujitsu	pieces	21
1.14	LCD display multitouch 46"	MT467	MULTITOUCH LTD	pieces	6
1.15	Software integrated environment	MTCSSDKB	MULTITOUCH LTD	pieces	1
1.16	Display PC	MTPCL4	MULTITOUCH LTD	pieces	2
1.17	Software updates for display PC	MTPCW1	MULTITOUCH LTD	pieces	2
1.18	Tracking PC	MTPCT4A	MULTITOUCH LTD	pieces	2
1.19	Picking set for two monitors	MT46APK2-2	MULTITOUCH LTD	pieces	3
1.20	Software support	MTPSOS	MULTITOUCH LTD	pieces	4
	2. Videoconferencing subsystem				
2.1	High-resolution videoconferencing codec with option	LifeSize Room 220	LifeSize	pieces	1
	of multiple point and high-resolution camera	- 10x - Non-AES			
2.2	Standard one-year service pack	LifeSize Assurance Maintenance Services (1-year)	LifeSize	pieces	1
	3. Control subsystem				
3.1	Master controller	CP2E	Crestron	pieces	1
	4. Wiring subsystem				
4.1	16-port asynchronous server RS-232/422/485 in Ethernet	NPort 5650-16	moxa	pieces	1
4.2	Ethernet multiplexer for 48 ports 10/100 Mbit and 2 ports 1000BT	WS-C2960-48TT-L	Cisco	pieces	1
4.3	HDMI 1.4, 3D, RS232 and infrared signals transmitter by means of twisted-pair	CH-501TX	CYPRESS	pieces	30
4.4	HDMI 1.4, 3D, RS232 and infrared signals receiver by means of twisted-pair	CH-501RX	CYPRESS	pieces	30

5. Software

4.5	Central module to generate and transfer content players (maximum 100 players)	C-nario Messenger Master (100)	C-Nario	pieces	1
4.6	Plug-in to receive nonstatic information from external sources (websites, text and XML files)	Content Integration Package	C-Nario	pieces	1
4.7	Player program to play content on the cross-links of monitors	Synchronized Player	C-Nario	pieces	15
	The program to play content	Full HD Multilayer Player	C-Nario	pieces	20

6. Furniture, special structures, wiring cables, mounting elements, accessories and consumables

6.1	Set of connection cables and mounting articles			pieces	1
6.2	Slides for installation to server frame HP Depth Adjustable Fixed Rail Rack Kit (xw4X00, Z200, Z400)	WH340AA	HP	pieces	2
6.3	19″ floor cabinet DG-Rack 42U 600x780x2021 mm grey	Estap		set	1

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Review of the Polymedia's work on the Rostelecom flagship office project

Polymedia's wide popularity on the market of audiovisual technologies and systems integration determined our choice in favor of the solutions proposed by the company to equip our flagship stores. However, this was not an exhaustive factor, and additional. The main decision for the benefit of Polymedia was the fact that the company has offered the most modern and unique at the time components and the equipment. This will enable to integrate bold innovative ideas of designers, led the creation of the leader, as well as to achieve the most modern technical and technological level of the interaction between "Rostelecom" and visitors of the office.

An important factor in this project was the fact that, together with the efforts of Polymedia managed to create not just a "static system" display showing the promo video and information for visitors, but organize direct communication with those who come to the office. This was possible due to the unique Touch-screen-modules integrated in products and services' demonstration areas and obtain virtually all information about the company, its products and services in the form of interactive communication.

Experience of cooperation between the two companies in the creation of Flagship stores in the regions of Russia has shown great potential and bright prospects. We hope our cooperation with Polymedia will continue not only in this project framework and will be more successful.

Head of Brand Management
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