Multi-User Multi-Touch Applications

Guide for Professionals







One Device for Every Environment





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In our personal lives, we already enjoy the benefits of Multi-Touch technology built into smartphones and tablets. Modern software means performing tasks on these devices is simple and intuitive. Similarly, at work, these technologies also open up a whole new world of possibilities for all kinds of businesses, by creating new and exciting ways for professionals to be more productive.

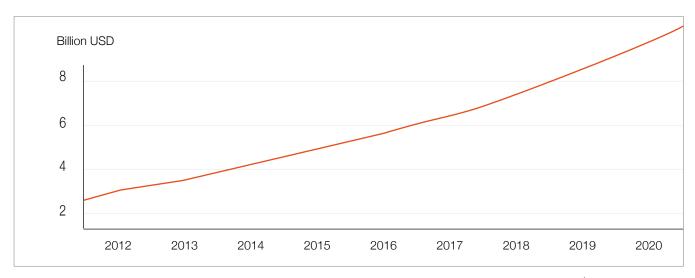
Users can collaborate on the same content, side-by-side, and work together more efficiently as the technology becomes transparent and no longer disrupts the user experience.

For example, different windows called 'popups' can be simultaneously opened to create a multi-faceted experience that encourages greater engagement, sales, or more compelling staff training. Of course, any new technology is only as good as the experts deploying it and the quality of content, as well as other factors such as accessibility, usability and durability.

With this Multi-User Multi-Touch technology applied to large format displays, companies and their creative agencies are already creating fresh, tangible experiences. Multi-Touch is a more memorable way of engaging with customers and can help to drive sales conversion, cross-selling and message retention. It gets rid of the limitations of passive communications and allows much more information to be shared in an increasingly exciting format. It has proven to significantly help staff improve relationships with customers.

This Multi-User Multi-Touch Applications Guide for Professionals will give you a headstart - we hope you'll enjoy it!

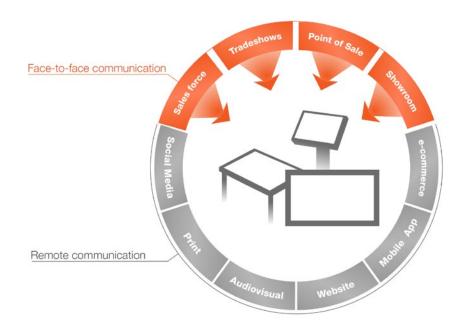
The Atracsys Team



Worldwide sales within the Multi-Touch market are strong: research firm BCC estimates the market to be worth \$7.3 billion by 2018.

Use face-to-face digital tools

Companies have invested significantly in remote communication media such as websites, mobile apps and print, but are lacking the digital tools for face-to-face environment. Businesses must make the most of one-to-one and one-to-many customer interactions - via shops, showrooms and tradeshows - by focusing on sales. Multi-User Multi-Touch applications fill this important communication gap by delivering exciting, engaging content on large format devices where it is most needed.



Involve your customers

Whether a customer, co-worker or event attendee, it's critical to involve your audience in the knowledge/information transfer process to ultimately lead to greater message retention. The key

here is that they directly interact with your content. Whereas a tablet can be considered as 'semi-active' - due to the fact that people can only use it sequentially - a large format MultiTouch device is 'active' as it engages all users around the same content, simultaneously, enhancing the human-to-human experience.





passive



semi-active



active!

What is Multi-User Multi-Touch?

By Paolo Pedrazzoli, 3M Touch Systems EMEA Marketing Operations Manager

"Multi-User Multi-Touch display take the viewer's experience to a whole new, interactive level. Simply using their fingertips, this highly intuitive technology makes it simple to explore a whole wealth of information.

The beauty of touch technology is that most of us are already familiar with how it works, through our smartphones

and other consumer devices. Multi-Touch technology takes that experience a step further, enabling a multi-user, compelling way to communicate that can be applied to all kinds of environments. In recent years, the technology itself has developed hugely, with major advances in response times, accuracy of touch, clarity of screen, ability to perform in

extremely challenging conditions and robust performance.

Whatever the application, Multi-Touch technology opens up a whole new way to share useful information, create an enjoyable user experience, for people to learn, share and collaborate."



Increasing versatility in Multi-User Multi-Touch technologies, through the sheer range of sizes and orientations available, means your interactive display goals will be easily met. From self-servicing kiosks, perfect for single- and dual-user interaction, to collaborative 84" Multi-Touch tables that can accommodate up to eight people simultaneously, it is important to use the appropriate hardware for your specific environment. Here is an overview of the main locations and use-cases where Multi-Touch technologies help solving important challenges.

Top Tip:

Although interactive devices can accommodate a large number of users, planning the dimension of the display for the audience size and type is key to a successful installation. Be aware of the restrictions of display dimensions - it's easy to overload an interface by having too many users interacting at the same time.



Kiosks

Size: 22" to 55" **Users:** 1 to 2

Locations:

Point of sale, tradeshows, front-desks, malls, hotels, museums

Use cases:

Interactive digital signage, virtual concierge, way-finding, digital catalogue

Advantages:

Eye-catching, promotes self-service, ergonomic

Tables

Size: 32" to 84" **Users:** 1 to 8

Locations:

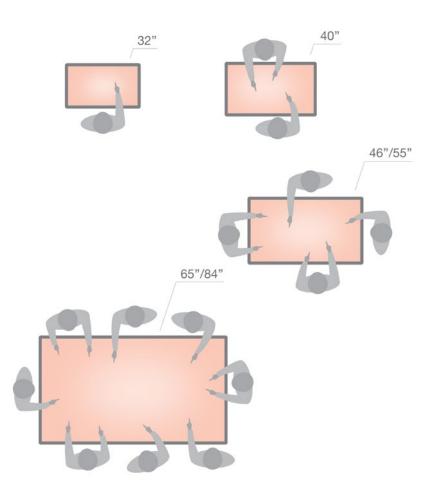
Point of sale, showrooms, tradeshows, meeting rooms, museums

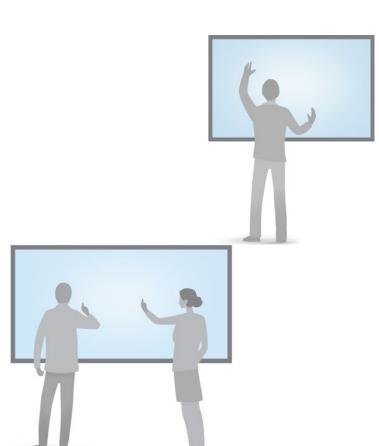
Use cases:

Brainstorming, product presentation, sales speech, multi-player games, training

Advantages:

Collaborative, intimate, ergonomic, versatile





Vertical screens

Size: 32" to 84" **Users:** 1 to 2

Locations

Showrooms, tradeshows, meeting rooms, point of sale, factories

Use cases:

Team meetings, interactive digital signage, product presentation, digital catalogue, brainstorming

Advantages:

Eye-catching, promotes self-service, low space requirement

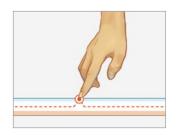
Overview of Multi-Touch Technologies

Multi-Touch technologies have been available in different forms since the 1970s, but have developed a great deal in recent years. From single-touch resistive screens and touchless interfaces to Multi-User Multi-Touch systems: the holy grail of user experience design is to make the technology literally disappear. Intuitive gesture control lets anyone immediately interact with the content itself.

Unlike traditional keyboard and mouse applications, the design and development of Multi-Touch software requires a deep understanding of the underlying hardware. For a truly ergonomic experience, the perfect combination of interaction design, software and Multi-Touch hardware is essential.

Discover by yourself the many different available Multi-Touch technologies that provide state-of-the-art touch feedback.

Electrostatic systems

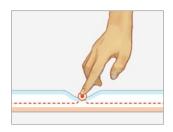


Projected capacitance (PCAP)

Invisible electrodes create an electrostatic field on the screen that is modified by the user's finger. This technology is used on most smartphones and tablets.

Advantages: Almost invisible, extremely robust and reactive, not sensitive to ambient light, large number of simultaneous touch points

Disadvantages: Only conductive elements can be used to interact (i.e. no isolating gloves), limited object recognition capabilities



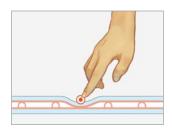
3D touch

Using the same principle as projected capacitance, the sensors are also able to measure the slight distance change between the cover glass and the backlight due to increased finger pressure.

Advantages: Almost invisible, extremely robust and reactive, not sensitive to ambient light, pressure dependent context menus

Disadvantages: Only conductive elements can be used to interact (i.e. no isolating gloves), limited object recognition capabilities, not available in large formats

Pressure-based systems



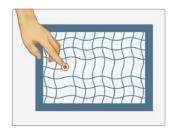
Resistive touch

Pressure creates a contact between two conductive layers separated by spacers.

Advantages: Interaction with gloves possible, extremely stable, immune to ambient light

Disadvantages: Object recognition impossible, visible touch overlay, limited number of touch points

Acoustic systems



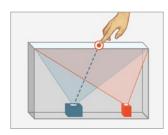
Acoustic surface

Ultrasonic waves pass over the touchscreen panel. When the panel is touched, the receptor senses that a portion of the wave is absorbed.

Advantages: Pure glass constructions, vandal proof, immune to ambient light

Disadvantages: Not available in large formats, object recognition impossible

Optical systems

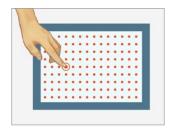


Camera-based vision system

Combined with a rear-projection screen or a LCD panel and infrared illumination, one or multiple cameras see through the screen and recognize fingers and objects.

Advantages: Recognition of a large number of objects, unlimited simultaneous touches

Disadvantages: Reduced image quality, sensitive to ambient light, heavy, voluminous

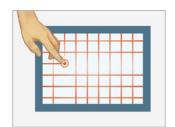


PixelSense™

Along with infrared backlighting, each pixel contains a light-sensitive element. The complete screen can be considered a big scanner.

Advantages: Very slim screen, large number of objects and fingers recognized

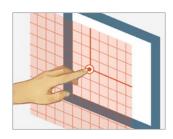
Disadvantages: Very sensitive to ambient light



Infrared frame

Pairs of infrared LEDs and photoreceptors are placed in the frame. The user's fingers interrupt the light beams. **Advantages**: Can be added on top of any non-touch display, cost effective, scalable (up to 300")

Disadvantages: Sensitive to sunlight, inanimate objects (like a sleeve) are also detected, difficult to clean

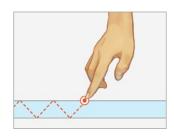


Infrared laser pane

An infrared laser scanner projects an invisible laser pane. Objects and fingers reflect the laser pulse and the distance is measured based on the time-of-flight of the light.

Advantages: Very large interactive area, interactions through shop-windows, non-touch gesture interaction possible

Disadvantages: No tactile feedback, low precision



InGlass™

Infrared light is injected in the cover glass, and opposite sided photoreceptors are placed. Due to total reflection, the light stays within the glass unless fingers on the glass disturb the total reflection.

Advantages: Invisible, robust due to large number of scan lines, cost effective for large screens, reactive

Disadvantages: Limited number of touch points, highly visible fingerprints on the glass



3D cameras

The 3D camera gets an image as well as depth- information for its visual field by means of infrared illumination.

Advantages: Non-touch gesture interaction possible

Disadvantages: No tactile feedback, background can heavily disturb the recognition, sensitive to ambient light

Use Cases

Far from being something only seen in a sci-fi movie, or some exclusive tradeshow booth, Multi-User Multi-Touch applications are in use today across thousands of businesses that are serious about growing customer engagement.

They can be used for both guided consulting and self-service presentations. They are ideal for sales representatives in face-to-face customer meetings, and perfect for public installations in real-estate, banking or insurance agencies, in shops, malls or museums.

Key benefits

Application type	Guided	Self-service
Combine all your marketing and sales material into one place	⊘	Ø
Share information/brochures in a quick and natural way		Ø
Generate leads and feed your CRM		
Dispatch and update the application remotely on all your devices		Ø
Present your products/services in an outstanding way and make messages crystal clear to improve retention	⊘	•
Help visitors find their way with interactive wayfinding		Ø
Upgrade your standard digital signage into an amazing interactive experience		Ø
Incentivize customers on the spot to avoid showrooming		•







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Top 8 Tips for the Perfect Application

To create the perfect Multi-User Multi-Touch application, you need to consider the type of product or services, the targeted audience, the industry sector, and much more. What works for one project may not be ideal for another, while many different factors can influence the ROI. Nevertheless there are a few essential points that should always be respected when creating, deploying and maintaining a Multi-User Multi-Touch application.



1. Value reactivity and robustness

Today we unconsciously reference any software we use to the apps on our smartphones. Anything behaving slower than "immediate" just does not feel right: an unreactive experience is very frustrating and will quickly put off users.

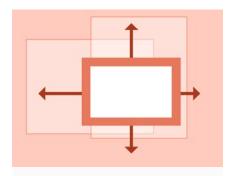
→ Before even thinking about content, be sure that your setup delivers the best possible performance.



2. Put the user in control

Always have your audience in mind when writing the concept of your application. It is a common mistake to focus on content and forget about the person who will interact with it. The complexity of the interface depends heavily on the targeted user: trained sales-representatives who use the application on a daily basis can handle a more sophisticated interface, while random users, passing by in a shop or an event, require more straightforward interactions.

→ Multi-Touch applications provide a fun and engaging experience only if the user feels in control.



3. Design for specific hardware

There are many different ways that you can put Multi-Touch hardware to use: from tablets to large-format displays, they can be placed horizontally, slanted or vertically, in portrait or landscape mode, standing alone or in an array of multiple screens. Your application needs to be designed accordingly: a wall-mounted display should not allow content to be displayed upside-down, while this feature is perfectly normal for a tabletop integration that people access from any side.

→ Design your Multi-User Multi-Touch application with respect to the specific hardware and how users will interact with it.



4. Go native

With an interactive application in mind, you may be tempted to build a cross-platform, one-fits-all tool using HTML5. Although useful for rapid prototyping and limited single-user interfaces, such applications lack the essentials of native coding, while in the world of Multi-User Multi-Touch, performance is key.

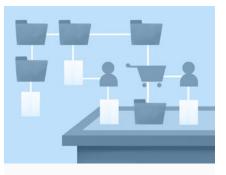
→ Your application has to make full use of the hardware's capabilities to deliver a reactive and visually stunning experience.



5. Wash, rinse, repeat!

With the large amount of data gathered by your applications, deployed on different devices and in different locations, you have the means to draw clear conclusions about usage patterns and areas that need improvement; whether this involves the introduction of automatic product discounts or redesigning the way users access data.

→ Analysis of real-world data and continuous improvement is the key for long-term success.



6. Integrate into your IT-ecosystem

Chances are that you already use different tools to organize and manage your data: CRM, ERP, product databases, e-commerce solutions and more. Consider from the very beginning to integrate your application into your existing IT-ecosystem, in order to make updates and maintenance seamless and to feed back important analytics.

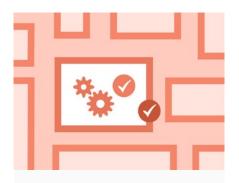
→ Multi-Touch provides an entirely new way to gather pivotal information from your audience. Be sure to make this information available wherever it is needed.



7. Be internet independent

Whether at a tradeshow or on the road, make sure you can deliver the best sales presentation every time. Favor a solution that will automatically update devices with the latest content and make it accessible offline. This way, your content always appears instantaneously even when an internet connection is unavailable.

→ A solution that synchronizes data in the background and operates in offline mode is extremely reactive and robust.



8. Rely on your service provider

When outsourcing the development of your interactive solution, choose your partners with great care: go for a software development agency and a hardware provider that have a proven track-record in successfully implementing Multi-User Multi-Touch projects. Underestimating the quality of both hardand software will ultimately result in second-class user experiences and high maintenance costs.

→ Establish a support and maintenance plan that guarantees high reactivity whenever you need support.

How Atracsys Makes Content King: the PopupExperience

Atracsys PopupExperience is a Multi-User Multi-Touch application optimized for interactions on any Multi-Touch screen. It has been designed to be extremely reactive and robust even on 4K ultra-high-definition (UHD) displays.

The PopupExperience allows the flexible organization of multimedia elements in a non-disruptive interactive experience.

You can choose among a growing list of templates/modules, such as the support of PDF files, images and videos, data collection through quizzes or surveys, website consultations as well as engaging games that will let your audience play with your brand.

What is a popup?

A popup is an independent window, within a Multi-Touch application, displaying any type of content: images, videos, PDFs, slideshows, webpages, quizzes, surveys, games, etc. A popup can be accessed in many various ways and naturally manipulated with standard Multi-Touch gestures. It can be added to a basket, shared by email, sent to a remote screen and much more!

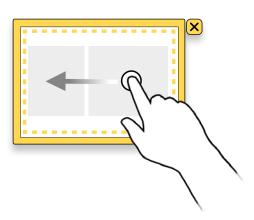
Administration through atracCloud

Your PopupExperience can be managed entirely through the atracCloud: a certified swiss-hosted CMS that allows updating of your content at any time, plus other services that guarantee a smooth roll-out, remote control of the application, access to usage data, etc. Administration was never easier.

How to interact with content

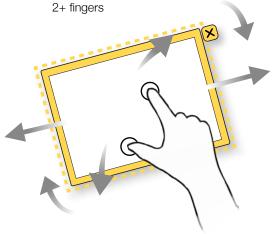
Inside the popup

1 finger

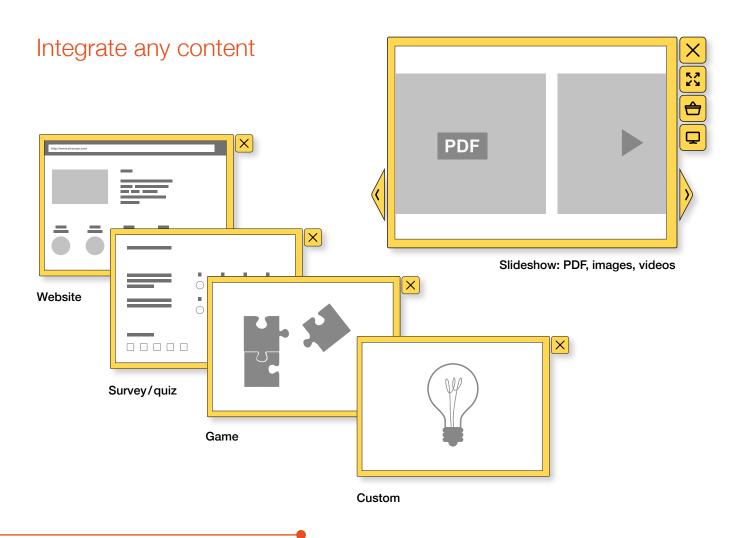


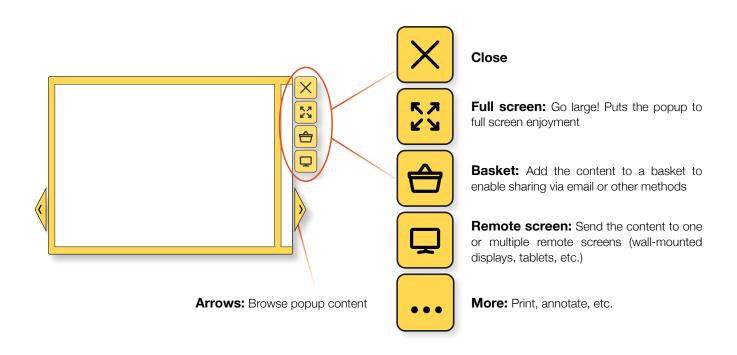
- Browse a slideshow of content with a simple swipe
- Interact with content: launch a video, play a game, etc

Popup manipulation



- Move and rotate
- · Zoom in and out





Frontend Basics

A typical PopupExperience involves a range of exciting interactive elements. Discover below the many possibilities to display and access your content.

Background

Display a slideshow of images, a video or a scrollable image in the background.

Timeline/process presentation Organize your content sequentially to demonstrate causal relationships.

Digital signage

Attract visitors with a dynamic screensaver: run a video or let a virtual hand demonstrate the navigation throughout the interface.

Navigation

Product presentation

An interactive illustration of your product leads directly to the desired information.

Media lists

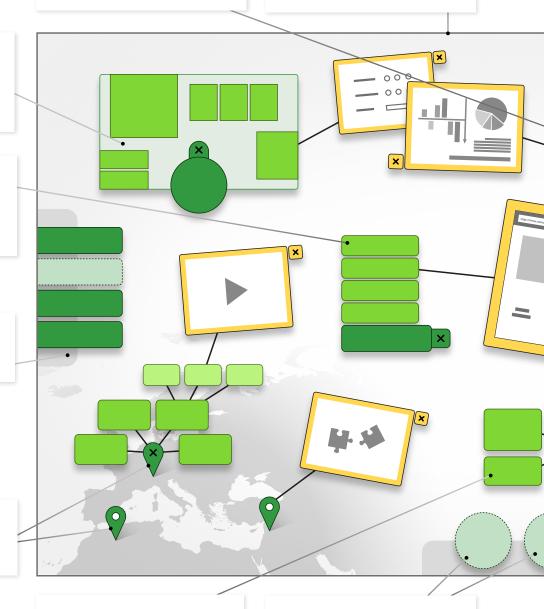
Display your content in a list if you have a large number of similar items.

Dock

Group together related tokens.

Hotspots

Anchored points that open ever more content.



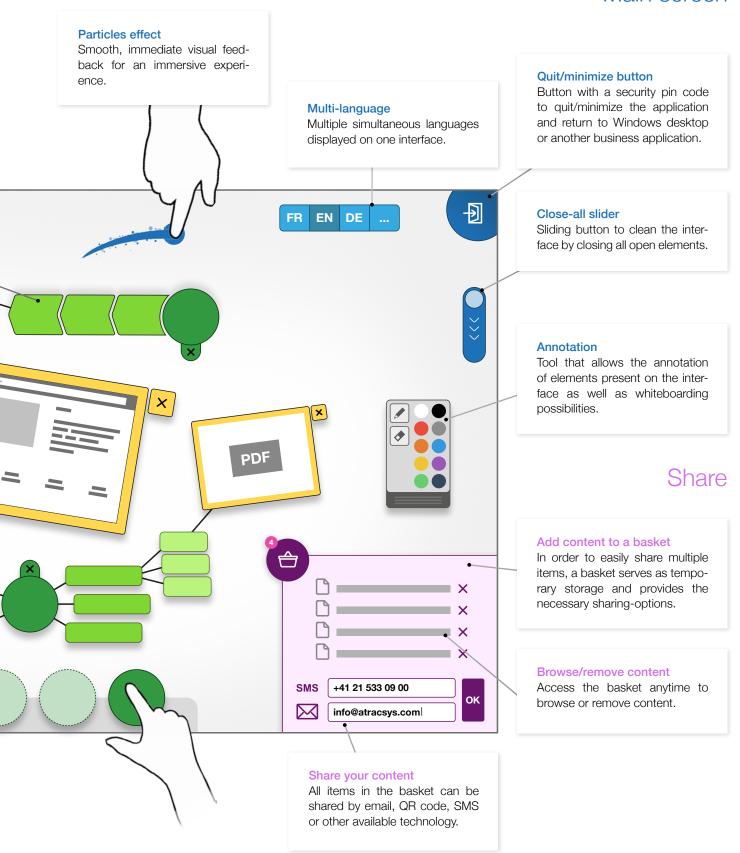
Mind-map

Display your content in a mindmapping structure, for smooth navigation in an organic environment.

Tokens

Free elements that can be dragged and dropped anywhere on the interface to open content.

Main screen



Five Steps to Maximize ROI

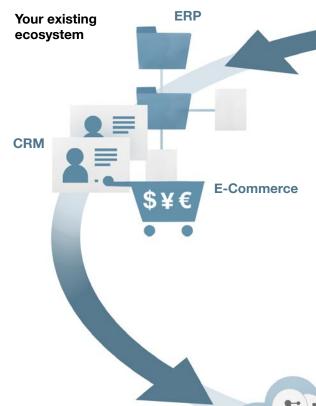
Atracsys PopupExperience acts as a crucial interactive element that dynamically links your ecosystem with your customers, to deliver evermore valuable data in a continuous cycle.

1. Agglomerate and structure assets

Start with collecting all necessary assets from your ERP, CRM, e-commerce and other databases. We will assist you to structure all data into an adequate hierarchy, ready for presentation to your prospects or customers.

5. Generate leads and increase sales

The information gathered by the Popup-Experience is fed back into your CRM, from where all your employees can access these vital insights. You now have the means to increase sales!



2. Make content available: atracCloud

Our atracCloud (hosted in Switzerland or on your company's servers) hosts all data that needs to be served to the PopupExperience. Included atracCloud services are:

• CMS: Content Management System to add, remove or modify content

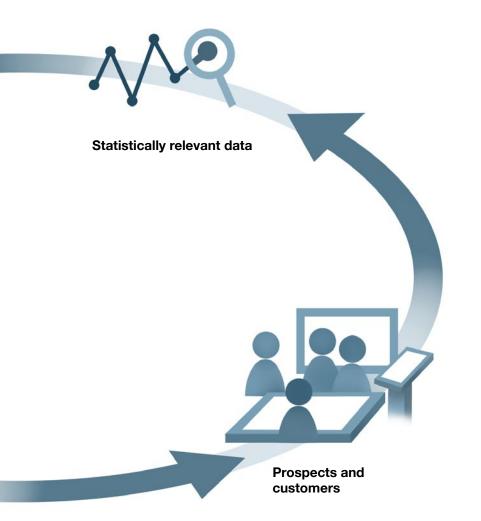
- Device Manager: service to monitor and control all your installations
- atracSync: protocol that makes your application available and updated on multiple devices
- Backup: full security for your Popup-Experience and data



atracCloud

4. Analyze and improve

Working effectively with data can turn a good experience into an amazing one! Together, we will analyze all relevant data from your application to uncover useful insights. From knowing exactly how many times a particular element has been clicked, to finding patterns on how users access data, these valuable statistics will help you optimize the ROI of your PopupExperience.



3. Present and share

Let the PopupExperience impress your customers. Take advantage of smooth and reactive interactions to present to and involve your audience. Not only is information shared in a natural way, but it is also an excellent way to collect data for your CRM.

Want More?

For companies seeking to boost customer and staff engagement and get ready for the future, Atracsys will develop a whole set of custom collaboration solutions that perfectly fit into any corporate infrastructure. From teamworking and event tools to technical interfaces embedded in machines, large-format Multi-Touch devices will revolutionize the way you, and your business, work.

Training

Involve your employees and partners in your training sessions with user-friendly educational tools to increase message retention. Multi-User Multi-Touch adds a whole new dimension to training activities, providing a much more collaborative environment and an efficient and automatic way to capture information about each person's progress.

Resources management

Manage team activities more easily, whether monitoring KPIs or allocating tasks. Multi-User Multi-Touch applications create an enjoyable process for everyone, help to maintain motivation at a high level and achieve team goals quicker. No more whiteboards covered with illegible pieces of paper and writing!

Technical interfaces

Give a fresh start to your technical interfaces. Our hardware expertise combined with rapid and flexible software development, as well as access to world-class technology, means that however demanding the environment is, we can conceive the right technical interface for your industrial environment. Applications include machine monitoring and user interfaces in embedded systems.

Brainstorming

Write down your ideas and get in touch!



About Atracsys

Atracsys focuses on delivering outstanding Multi-User Multi-Touch turn-key solutions, from the selection of the best hardware to the development of dedicated custom software. Our R&D laboratory continuously tests new Multi-Touch technologies and optimizes their use in order to meet clients' demands. Delivering highest-standard quality products since 2004, Atracsys Interactive Solutions has become a well-known, trusted partner that many multinational brands rely upon.

Go online on **www.PopupXP.com** for more information and/or call us today!



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Atracsys is an active member of the 3M Multi-Touch Developer Network.

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