

# Do Players Prefer Integrated User Interfaces? A Qualitative Study of Game UI Design Issues

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## ABSTRACT

With basis in a qualitative player study, this paper presents different player attitudes concerning user interface elements. The paper focuses on how the game user interface influences the players' involvement in the game, and how the players navigate between different sources of involvement. We argue that there is no necessary connection between a transparent interface and involvement, and that in many cases, overlay interfaces are preferred due to the clear information they present.

With point of departure in Ermi & Mäyra's (2005) view of player involvement as a complex phenomenon, and Jørgensen's (2010; forthcoming) research into the relationship between game user interfaces and the gameworld, we discuss how players in our qualitative study see involvement with respect to how the game UI is presented. This framework also enables us to discuss user interface design as a balancing act between aesthetics and mechanics, as the choice between transparent or superimposed interface features is a way to represent system information within the game context.

## Keywords

game user interface design, immersion, involvement, qualitative studies, player studies

## INTRODUCTION

There has been a trend in recent game user interface (UI) design to move system information away from windows, icons and overlays and integrate it into the game-world itself. Along with this trend, the question of whether players prefer interfaces that are integral to the gameworld or superimposed onto the screen has become the subject of

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heated debate in the developer community (Breda, 2008; Fagerholt & Lorentzon, 2009; Wilson, 2006).

Those who advocate traditional or superimposed interfaces stress the importance of making the system information explicit and readily visible to the player. The most obvious examples of such interfaces are found in information-heavy genres such as real-time strategy and massively multiplayer online games. The interfaces in these genres focus on functionality, with large portions of screen real-estate devoted to clickable buttons, instrument panels or head-up-displays (HUDs) that are clearly separate from the fictional universe.

Proponents of integrated interfaces, on the other hand, express concern that any information channel that is not integrated into the fictional world is a threat to player immersion. These designers strive to convey all system information through features that are part of the game-world, such as character dialogue, animations or particle effects. This trend is most pronounced in games sporting a first-person view. *Peter Jackson's King Kong* (Ubisoft Montpellier, 2005) is an example of a game that takes this philosophy to the extreme. Here animation and dialog replaces even the traditional ammo counter and life bar. Games like *Crysis* (Crytek, 2007), *Metroid Prime: Corruption* (Retro Studios, 2007) and *Assassin's Creed* (Ubisoft Montreal, 2007) take a different approach by grounding the HUD in the fiction by making it a part of the avatar's high-tech equipment.

However, Fagerholt & Lorentzon (2009) present a middle ground philosophy. Whenever possible, they say, system information should be integrated as native to the game-world because it allows the player to reason and make in-game choices based on their knowledge of how things work in the physical world. When this approach is not able to present the appropriate information, however, they emphasize that functionality, clarity and consistency are more important than transparency and world integration. With this approach in mind, this paper investigates how the presentation of system information affects the players' involvement in the game as system and fictional world.

In this paper we are presenting the first preliminary results from a qualitative study in which players were observed and interviewed while playing *Assassin's Creed* without the graphical user interface present. The analysis focuses how the presence and absence of the user interface affect the players' degree of involvement.

## **WHAT IS THE GAME USER INTERFACE?**

The game user interface is a system that provides the player with gameplay relevant information and with the right tools to interact with game. According to game developer Brent Fox, the game interface "is the part of the game that allows the user to interact with the game. [It] is the connection between the user and the game" (2005). Jesse Schell specifies by describing the game interface as "the infinitely thin membrane that separates (...) player and (...) game", and that provides the player with access to the gameworld (Schell, 2008). Common for these accounts is the idea that the game user interface is any and all features that provide information or assist the player in interacting with the game. In this sense, it includes both hardware features such as controllers and screen, and software features such as the audiovisual features of the game. In this paper we discuss the parts of the game software that constitute these communicative functions; that is, the graphical user interface (GUI) as well as auditory feedback. As we have seen above, such game features may or may not be included as part of the fiction or the game universe, and

there is a debate going on as to whether integrated or superimposed UIs are better for the player's involvement.

With respect to this debate, we will argue that all features that provide game relevant information to the player must be understood as part of the user interface, regardless of whether they are integral to the fiction or not. In other words, we do not limit our understanding of the game UI to mean overlay information, icons and windows that are not visualized as a natural part of the gameworld environment. We also see information that is integral to that environment as part of the extended UI, such as the climbable towers in *Assassin's Creed*.

A note on the popular concept "HUD" should be made here. This is an abbreviation for head-up display, an information display technology that projects information on the windscreen of for instance an airplane so that pilots may receive information while keeping their attention focused on their surroundings (Shneiderman, 1998). We typically find an emulation of this technology in first-person view games, such as *Metroid Prime* or *Crysis*, where system information is presented as an integral part of the avatar's helmet. Although modern digital games often integrate part of the UI into the gameworld, the concept HUD is still in use when describing the parts of the UI that are not made integral to the gameworld, but superimposed as an overlay. The benefit of using superimposed information is that the UI designers may use a separate plane that does not interfere with the space of the gameworld when presenting system information.

## **GAME INVOLVEMENT**

With basis in qualitative studies, we will argue that so-called "immersive" or integrated interfaces do not, as Wilson claims, by necessity strengthen the sense of involvement compared to the so-called "intrusive" or superimposed interfaces. However, to do this we need to provide a brief account of how we understand game involvement in this context. Our aim here is not to outline a theory of game involvement; suffice to say that the game experience may inspire a range of different kinds and degrees of involvement. As this study shows, getting involved in the game is central to the game experience of all respondents; however, whether this involvement concerns in-depth concentration about strategic action, empathy with characters, the pleasures of navigating a space, or something else, is connected to individual preferences and the specific game situation. In this and the following paragraph we will make a brief outline of our perspective on game involvement and how it is affected by the game user interface.

In psychology, Csikszentmihalyi's *flow* (1990, 1998) is a general way of describing involvement as a deep level of concentration and attachment. Flow is the feeling of being intensely engaged in an activity for its own sake. During flow, the passing of time seems to disappear due to a deep focus in the activity. As we will see below, this is an experience that players often seek when playing, and a game's ability to create flow is often seen as a sign of its quality. In games, the sense of flow can be associated with different aspects of the game, depending on what aspect the player finds most attractive for his or her experience. For some, then, flow may be created by exploring and navigating an environment, while for others, flow is initiated by following the development of a plot.

Another popular way of describing involvement is *immersion*, which has become a buzz word which often is associated with the sense of being absorbed in the story world of the game. Going back to Janet Murray, however, immersion is associated with the experience

of being surrounded by the game environment, or “the sensation of being surrounded by a completely other reality” (1997). The focus on spatial and sensory involvement in games is also captured in the description of game involvement as *presence*; the perceptual and psychological sense of “being there” in a virtual environment (McMahan, 2003). As seen above, “immersive” is often used by developers to describe game UIs that integrate or explain system information as part of the fictional world; thereby suggesting that any attempt of making the game appear non-mediated will increase the player’s sense of being part of the game environment.

The debate about game UI design is characterized by radically different accounts of how the game UI affects player involvement. However, Ermi & Mäyra (2005) emphasize that game involvement is a multidimensional phenomenon where different kinds of experiences may overlap. They distinguish between a story oriented, game system oriented, and a sensory oriented involvement. While *sensory immersion* is a sense of involvement with the audiovisual aspects of the game, and which everyone regardless of game experience may appreciate, *challenge-based immersion* is particularly central for games, and includes both mental and motor skills. Last but not least there is *imaginative immersion*, which is about getting absorbed with the story and characters of the game. For Ermi & Mäyra, these may be combined in different ways to provide a complex understanding of game involvement. In the following analysis, we share Ermi & Mäyra’s view that game involvement is a multidimensional phenomenon that is highly individual and that may be evoked by different aspects of the game. However, we do not want to limit ourselves to the three forms of immersion that Ermi & Mäyra propose, but want to suggest that the sources of involvement are even more varied and dependent on individual player preferences. For this reason, we also draw on the aesthetics described in Hunicke et al’s MDA model (2004) to investigate a wider range of player motivations.

With this understanding as the point of departure, we will show that involvement is a complex phenomenon, and that even though there may be a connection between involvement and UI design, this cannot be reduced to a simple explanation that suggests that integrating UI features in the game environment results in an increased degree of involvement.

### **The user interface and involvement**

The debate about the integrated vs. superimposed interfaces concerns the player’s involvement with respect to how the user interface is presented. It seems, however, that these two traditions for UI design follow different understandings of *what creates involvement* in games, and what involvement *is* in a game context. Those who support the integration of system information into the game and thus making it part of the fiction seem to understand the *fiction* and/or the *narrative* as the primary establisher of involvement, or Ermi & Mäyra (2005) call *imaginative immersion*. On the other hand, those who argue for that making the system information explicit and readily visible to the player seem to understand *gameplay* and/or *the game system* as the primary source for involvement, or Ermi & Mäyra *challenge-based immersion*.

From this perspective, players that are primarily attracted by a game’s ludic aspects may not see fictional and narrative consistency as decisive for whether or not they let themselves become absorbed in the game. On the other hand, players that are more interested in the narrative and fictional aspects of games may find explicit system information that is not explained as part of the fictional world as disturbing for their sense of involvement (Jørgensen, 2011). However, as our analysis will show, the traditional

overlay interface is not as “intrusive” as one might think. Regardless of what kind of involvement a player is attracted to when playing a game, players have a tendency to accept game UI features regardless of how they are positioned in the game, as long as the UI is able to provide them with relevant information in the given game situation. The game UI is seen as a tool for successful navigation and action in a game, and a necessity for enabling the player to interact with the medium in meaningful ways. For this reason, superimposed icons, menus and windows are accepted by players even though such features go against the illusion that the game is a natural, unmediated environment.

According to Jørgensen (forthcoming), players accept the presence of UI elements that break with the sense of a coherent fictional world as long as the UI features are clearly motivated, and provide relevant and sufficient information in a given situation. This kind of system information is a convention in computer games, and is accepted because it enables the player to navigate and play the game effectively. The game UI must be able to communicate information in a clear and consistent manner, but if it goes beyond that, there is a risk that the player becomes annoyed instead. This is because they are given more information than is needed. From this perspective, involvement does not seem to be negatively affected by superimposed interface features not explained as part of the fiction. It should be mentioned, however, that although traditional overlay interfaces do not disturb the sense of involvement, it is by most players seen as elegant to have integrated interfaces instead. However, the need for clear, specific and consistent information makes it necessary to deviate from what is more aesthetically pleasing in some game situations (Jørgensen, forthcoming).

## **METHOD AND DATA COLLECTION**

In his ongoing PhD project, Llanos studies how the game UI interacts with player involvement. As part of this research, he decided to have respondents play *Assassin's Creed* with the HUD switched off. This game was chosen because it is one in which the designers have gone to great lengths to explain all system information as part of the fictional universe presented in the game. However, the game also features a traditional GUI consisting of elements that closely resemble the genre standard, such as a minimap, “health” bar and weapon selection indicator. Of course, as *Assassin's Creed* is designed with an overlay interface, removing it means taking away features that are intended for use by the players. For this reason, it may not be surprising that several of the respondents find the game more involving when the UI is present. After all, the game is intended for gameplay with the UI. At the same time, the ability to remove the UI is a game feature, and most of the information available through the HUD is also integrated into the gameworld environment so that the game is playable also without the HUD. However, the post-play interview guide was designed with this in mind. This method enabled the interviewer to identify situations where respondents are missing information, and allowed the interviewer to pose follow-up questions to shed light on specific problems, such as if the player felt that a critical UI element was missing. Respondents were also encouraged to critically evaluate alternative ways of representing system information. For this reason, we believe that the attitudes presented below are representative of the respondents' general UI preferences.

The data was gathered through a series of semi-structured interviews and observation of play sessions. Each session started with a pre-play interview meant to establish their preferences in games and playstyles, as well as what experiences they looked for in the different games they played. Hunicke, LeBlanc & Zubek's Mechanics-Dynamics-Aesthetics model of game design (2004) was chosen as starting point, as it covers a wide

range of possible player motivations, and to study whether players are interested in the immediate experience, the interaction between agents in the game, or the underlying system. However, the respondents were encouraged to challenge the categories if they perceived them to be inaccurate or felt a need to differentiate between different types of games or settings.

The pre-play interview was followed by a brief play session (30-50 min.) of *Assassin's Creed* played with the HUD switched off. The focus here was on observing the players' general approaches to problem-solving and observing how the player navigated and made sense of the gameworld in the absence of a HUD.

Finally, each respondent was subjected to a post-play interview where they were asked to comment on the observational data from the play session. The respondents were also asked about several issues pertaining to the near-future framing story of *Assassin's Creed*, such as how they perceived the fictionalization of the HUD, differences in immersion in the two timelines (Near-future and Medieval Middle East), and how the framing story affected choices made and understanding of the main gameworld. In the cases where the respondents had previous experience with the game they were also asked to compare the current play session with previous play sessions.

## **ANALYSIS OF INTERVIEWS**

The following analysis is a first glance at a set of qualitative data that was collected during the spring and summer 2011. The data shows that removing the superimposed interface of *Assassin's Creed* does not in and of itself positively affect the respondents' sense of involvement. This is the case for all respondents regardless of whether it is the fictional setting, the narrative, the game mechanics, or navigating the world that draws them towards the game.

With attention towards respondents that reported attraction towards different kinds of involvement, we will go into detail below about some of the aspects that seem to have an influence on the relationship between the sense of involvement and the user interface. We will show that although it is analytically possible to distinguish between imaginative, challenge-based, and sensory kinds of involvement, the collected data challenges and expands the categories in interesting ways. As we will show, there are interesting variations *within* each of the types of immersion identified by Ermi & Mäyra (2005).

For "Anne", the presence of overlays and other UI features is not problematic for her sense of involvement. She is happy to accept UI information that helps her do what she wants to do in a game. The gameplay and freedom to act within the game are what is most important to her. When asked about how she prefers to orient herself in gameworlds, "Anne" says:

"I'm an idiot, I get lost, I want an overview. (...) I don't mind the glowing arrow (indicating the objective), I like knowing where I'm going."

As she gets easily lost in the game environment, the UI information allows her to remain in control over navigation. Thus, she gets an overview and keeps track of where she should be moving next. For her, the UI therefore helps her act in a way she finds meaningful within the game.

As mentioned earlier, the developers of *Assassin's Creed* has gone to great lengths to fictionalize the HUD. However, for "Anne" this effort is a waste of time:

"These are tools that the person making the game has given me. They do try (...) awfully hard to explain these things, but they don't need an explanation."

She finds the attempt to explain the HUD unnecessary, because it is there to provide information relevant for her ability to play the game satisfactorily; they are necessary tools for interaction. She is happy as long as the HUD elements are useful, and becomes annoyed with them if they are not. In the post-play interview she states that what she missed when playing without a HUD was the minimap and the social standing indicator. We see that she prefers clear, explicit options and information that lets her understand and play with the dynamics of the game. When describing why she likes the game, she says:

"(Assassin's Creed has a) very concrete (...) system. If you do this, that happens. If you punch a guard they'll chase after you."

She reveals that she will resort to walkthroughs if she gets really stuck, but as she says, "I hate it when I have to do that, it ruins the game." She cites both the hassle and the loss of self-confidence due to a sense of failure as the reasons why she dislikes consulting walkthroughs. For "Anne", it is not only about the frustration of being stuck in a game; it is more specifically connected to the fact that being stuck substantially *disempowers her* and reduces her ability to act in the game (Jørgensen, forthcoming). This can be seen in connection with the fact that "Anne" is also among those who are most upset when options and abilities are taken away from her in the context of the tutorial, in order to force her to do certain things and also when Altair does not respond as expected to her input.

Involvement for "Anne" is therefore a combination between challenge-based and imaginative immersion. The immediate feeling of being powerful in the gameworld that is important to her, but this empowerment is dependent upon characters and a world that she finds meaningful. For this reason, the narrative becomes subordinate to the sense of engaging with the world.

Compared to "Anne", "Bridget" feels a much stronger imaginative immersion, showing not only more interest in the narrative, but also an extreme connection and identification with the game characters. For example, she expresses a wish to fully identify with the avatar:

"I want us to be on equal footing, so that he should know exactly the same as me, and that what we do, we do together."

She also empathizes strongly with the game's NPCs:

"When I started playing I wasn't entirely familiar with all the buttons, so I pressed the one that was "throw knife" and I threw a knife right in the throat of a poor old man, who was just walking down the street, and he died immediately and I felt pretty bad for killing a poor innocent man."

The respondent's need and ability to identify with the fictional world are also evident in how she weaves her actions into the narrative. In a cutscene where Grand Master Al Mualim reprimands the avatar Altair for killing a man in a previous cutscene, "Bridget"

chooses to interpret the scolding as referring to the previously described incident where she inadvertently killed a bystander. She says she prefers it when the game refers to things she did, even if she has to imagine it, because then:

“He’s talking about me! (...) It’s me playing, not just me watching Altair”.

For “Bridget”, to get involved in the game is to become one with the avatar, but also to feel that the game responds in a way that reflects her emergent actions. She has a strong sense of involvement when she feels that the game responds to her actions in a fictionally meaningful way. This also suggests that the identification with the avatar is contingent on feeling empowered and able to act in the gameworld as the character would.

She also states that although removing the HUD makes playing the game harder, it is OK because it makes the game “more real”. She explains:

“I get lost very often (in the real world), and manage to get into weird situations, so I think it’s a little more real to me, a bit more appropriate, because (when) he’s perfect and always knows where he’s going, that’s very unreal to me.”

This contradicts what she said in the pre-play interview where she was clear about preferring to have a lot of tools available to help her orient herself in the gameworld because of this missing sense of direction that she often experiences. However, considering that her primary motivation is living a fantasy and connecting with the avatar/protagonist, it is not unlikely that she will go to great lengths to internalize usability issues to avoid the cognitive dissonance associated with breaking the fiction:

“When I don’t manage the controls I panic a little, and then I feel that I become a little more like him, because he’s certainly panicking too, because someone is coming after him (...) I panic too and then I get more absorbed into the game.”

This account is in sharp contrast to that of “Anne”, who instead gets irritated and loses her sense of imaginative immersion very quickly when the avatar does not respond in the way she expects.

Although imaginative and challenged-based immersion are both important to “Bridget”, her sense of involvement is most strongly connected to identification with the avatar, both as an interface into the world and as a protagonist in the fiction. This is evident in how she both projects herself into the avatar and adapts her own playstyle to fit the character’s personality. The strong sense of identification between the avatar and herself means that she finds it disturbing to have access to information the avatar would not be privy to, even when this makes it harder to play the game. However, since “Bridget” seems to find ways to explain system information as part of the fiction, specific UI choices rarely seem to disturb her sense of involvement, even though there are certain features she find disturbing. For instance, of all the HUD elements, she cites pop-up messages as the most problematic.

“Ellen” wants to engage with the fictional world and express herself in it. She identifies almost exclusively with the avatar and projects herself into the character. Instead of taking the role as the assassin Altair in this world, she wants to become a part of it herself. She is in other words, not playing the role of a character, but instead takes on the role of *herself* in a fictional world (Waggoner, 2009). The whole idea of exploring personalities besides oneself in a game seems foreign to her, as exemplified through her



comment on people who experiment with identity play in MMORPGs: “That’s why they’re a bit, like, crazy”. At one point in the game, she is informed that the avatar Altair’s “Eagle Vision” ability only is available when he is “fully synchronized”, which presupposes that he has not injured any civilians. Her response is in sharp contrast to “Bridget”’s negative reaction to killing a bystander, as she decides that this information inspires her to investigate how this system works in practice:

“...and then I thought that maybe I should kill some people in the village, I dunno, just to test it out.”

Although involvement for “Ellen” is to be transported into a fantasy world, she also wants to challenge the system to find out how the mechanics work. For her the gameworld is not only a fantasy world, but also a system with certain properties that she must understand in order to act meaningfully in it.

In contrast, “Dick” and “Finn” have little interest in neither projecting themselves into the fiction, nor engaging with the characters on this kind of level. When describing his connection to NPCs, “Finn” states that “I have yet to experience it. In most cases, they are very stereotypical.” Furthermore, both state that they have very little interest in expression or self-exploration through for example identity-play or character customization. They are attracted by game mechanics and strategy optimization, and trying to understand and manipulate the game system. Thus, they do not seem very interested in imaginative immersion; however, as we will discuss in detail below, they do express that *narrative* is an important factor in their play experience. Since they are primarily attracted by the game system, we would expect them to be in favor of explicit information. However, they are instead the clearest proponents of the first-person camera view with a “clean” interface.

Although “Dick” and “Finn” prefer playing without the HUD, this does not seem to be motivated by a desire for imaginative immersion and the illusion of an unmediated world. On the contrary, in their search for gameplay relevant information, they shift their focus to find signals in the gameworld environment. As “Finn” states,

“It was more difficult (to play without the HUD), but I think it was better. Somewhat more in a realistic way, I had to be more observant in regards to my surroundings.”

To illustrate, for them a hay wagon in *Assassin’s Creed* is not simply a set piece but somewhere to hide that also prompts them to look for the potential threat they should be hiding from. In this sense, the lack of HUD provides a greater challenge for them. This is a challenge that they appreciate, and which indicates that they see the gameworld itself as part of the game’s interface. This argument is also strengthened by the fact that they react negatively to invisible walls and inconsistencies in the gameworld; not because it breaks the illusion of a consistent fictional world, but because it breaks with the idea of the *gameworld as an environment designed for play* (Jørgensen, 2010; forthcoming; Klevjer, 2007). To them it is equivalent to a HUD giving erroneous information.

As mentioned above, “Dick” and “Finn” also state that a strong narrative is important to them. This may seem strange when they specifically state that they are not interested in fictional involvement. They do not engage emotionally with the NPC and they do not express interest in the fiction. Instead there seems to be an appreciation for the *dramatic*

*structure*. In this sense, we argue that “Dick” and “Finn” appreciate the underlying structures of *both* the narrative and the gameplay.

In this context, we can also explain “Anne”’s relative disregard for the story: she cares about the immediate experience of playing, and not about the underlying structure of neither gameplay nor story. She is only interested in the narrative insofar as it defines goals, friends and enemies, and in this context, plot development becomes secondary.

As a whole, it seems “Dick” and “Finn”’s single-player experience is closer to what “Anne” and “Bridget” describe when they play socially: The story is still perceived as engaging and important, but the engagement with the avatar, the sense of being part of the fiction is lost, replaced by a layer of meta-reflection that “Anne” and “Bridget” express in social play situations, but “Dick” and “Finn” experience when playing alone.

To sum up, the respondents who engage the least in the fictional characters are positive to the integrated UI, as are the respondent who clearly engages a lot with them. The respondents who fall in between prefer a practical, pragmatic UI. However, we interpret this as a *preference*, and not as a deciding factor in whether they are able to engage in a particular type of involvement. In other words, an integrated UI will not make a player engage with fiction, narrative, and characters in a fundamentally different way. As “Finn” described above, a player with a preference for challenge-based immersion will start looking at the NPCs instead of the HUD overlay for clues, but they will not perceive them differently; they are still just pawns in the game.

## CONCLUSIONS AND SUMMARY

This preliminary analysis demonstrates that the idea that so-called “immersive” or minimal interfaces that strive towards including all system information into the gameworld environment and explaining it as part of fiction are not necessarily a goal to pursue. Although players often see the minimal UI as aesthetically attractive and an elegant way of representing system information, they always prefer to have relevant and sufficient information that allows them to interact meaningfully with the game mechanics and the gameworld. But as we have shown, *meaningful* obviously means different things to different players. However, once the players receive more information than they need, superimposed UI elements become annoying and for this reason they may risk ruining the sense of involvement.

We have also touched upon some of the shortcomings in the current understanding of involvement in games, emphasizing that involvement is important for all players, regardless of what aspects of the game they find most attractive. We have stressed Ermi & Mäyra’s point that involvement is a complex and multidimensional phenomenon that is dependent not only upon the nature of the specific game or genre but also upon player preferences and what they find attractive about games.

All of this has consequences for UI design. First of all, regardless of whether one is designing a minimal or a more extensive UI, the designer must always make sure to present gameplay relevant information in a sufficiently clear and precise manner. The information should be consistently communicated, also when it is integrated to the gameworld. Also, UI designers must be conscious about what kind of game experience they want to create, and reflect on how this can be achieved through specific approaches to the UI. They must understand what it means to move the health bar from a detailed overlay meter showing the exact number of hit points, to a system that shows damage

through covering the screen gradually in virtual blood splatter. A minimal UI that seems natural to the game environment is not the best way to present information that is critical, or that needs to be gauged on a continuous basis.

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