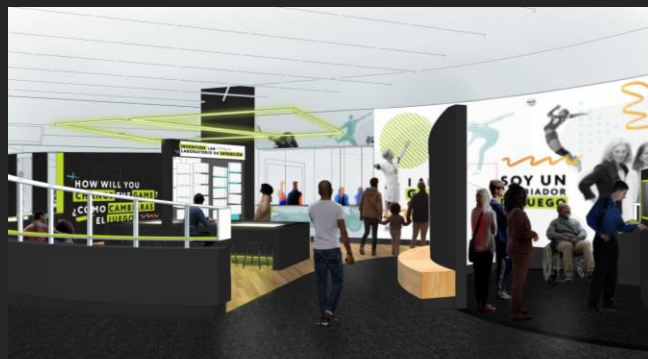


GAME CHANGERS



ALPHA PROTOTYPING FOR GAME CHANGERS EXHIBITION

PART 1



RK&A

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EXECUTIVE SUMMARY

RK&A conducted prototype testing for the *Game Changers* exhibition with three audiences: adults, female youth 10-17 years old, and male youth 13-14 years old. The main takeaways per the study objectives are:

1. Overall reactions to the materials:

- **All three audiences** responded positively to the exhibition materials. They **liked the variety of topics, people, and sports included**. They were particularly interested in thinking about topics or things they had not considered before.
- **All three audiences** are most **attracted to people's stories** (as opposed to objects or specific inventions).
- **All three audiences** commended the inclusivity of the exhibition, **appreciating the diversity of sports, race and ethnicity of individuals represented, and bilingual English and Spanish text**. They also suggested a few ways that the exhibition could be more inclusive, such as **including Hispanic/Latino and Asian American individuals, children, and other sports**.
- **Female adults and youth** want to see **greater and more substantial representation of females**. For example, they were concerned that females were not represented in male-dominated sports (e.g., basketball), not given recognition in female-dominated sports (e.g., gymnastics), and were not shown in strong roles (e.g., as swimsuit models but less as athletes and inventors).

2. Where individuals are regarding inventive identity formation:

- **All three audiences saw invention across the exhibition materials**. Some noted that they saw invention in sports in ways they had not thought about before.
- **Adults** read the **descriptive text literally**. So, when asked if they feel like a Game Changer, they responded "no" in the context that **they do not see themselves doing anything to change sports**. However, they **described themselves as having inventive qualities**, such as creativity and problem solving indicating there may be some barriers to identity formation in assigning the language of Game Changer to adults.
- **Female and male youth** expected that the exhibition would engage them in experiences that would make them feel like a Game Changer based on the descriptive text shown to them. While they were interested in what was in the exhibition, **it did not lead them to feel like a Game Changer, particularly in sports (i.e., despite the interactive components, the exhibition felt passive to them)**.
- In this alpha prototyping, most indicators of identity formation fall into the ontological and epistemological beliefs, which is not particularly surprising given the limitations of prototype testing (i.e., not experiencing whole exhibition in authentic way).

RECOMMENDATIONS

ACROSS THE EXHIBITION

- Consider representation of females.
- Consider stories that represent Hispanic/Latinos and Asian Americans (and generally all BIPOC groups).
- Consider stories representing children.
- Consider ways to allow more individuals to access to interactives at once to alleviate crowding.
- Continue to design interactives so youth feel engaged in the experience of an inventor or game changer to trigger more identity formation.
- Do not use the Game Changers logo in current form as a stand-alone representation for the exhibition since it does not communicate the exhibition ideas (e.g., use it and a supplemental image on maps or in marketing, consider adding a tagline, etc.)

STARTING LINE

- Connect game changer to sports earlier in the text.
- Consider calling attention to how you are “inventive” versus “a game changer” so the text does not read as literally (i.e., change sports games).
- Make an explicit call to think about invention in other areas of your life.

COMPETITIVE EDGE

- Consider rearranging the space so females are in eyesight.
- Include both male and female representations in a swimsuit (or as models/mannequins), so there is not a gender bias.

HEALTH + SAFETY

- Make changes so the space does not read like a “football” section.
- Include male and female representation more equally across the space.

FAIRNESS + ACCURACY

- Make sure one athlete is not singled out for doping (e.g., Lance Armstrong).
- Be sure to include objects that tell the story of the space (e.g., bike confused as invention of focus).
- Consider a debating component to the interactive (raised by both male and female youth).

FUN + ACCESS

- Consider alternative names for this section. This should be tested with the Smithsonian Access group who likely have feelings about the combination of the two words used together.
- Consider removing fan components or presenting different objects and images (a decision to be made after hearing from the Smithsonian Access group).

END ZONE

- Consider how to make this area more engaging; right now, it is likely to be skipped over.

STUDY BACKGROUND

RK&A conducted prototype testing for the *Game Changers* exhibition in Spring 2021. The exhibition is being developed by the Lemelson Center for the Study of Invention and Innovation at the Smithsonian Institution's National Museum of American History with the firm Roto. The objectives for the alpha prototyping are to explore:

1. Overall reactions to the materials:
 - What about the exhibition materials do people find most/least compelling, and why?
 - What are people's affective reactions to the exhibition materials (e.g., do the materials feel jarring/negative/unappealing, or do they make people feel curious/optimistic)?
 - What barriers exist to people engaging with the exhibition materials (including any terms, phrases, or concepts that are confusing or hard to understand, stories or people that do not resonate, etc.)?
2. Where individuals are regarding inventive identity formation:
 - How do they see invention in the exhibition materials?
 - What barriers exist to people connecting the exhibition materials with invention?
 - What barriers exist to people considering themselves inventive?

RK&A conducted interviews and focus groups with participants using materials from Roto's 35% design packet with some preliminary test written by the Lemelson Center.

Interviews were conducted one-on-one via Zoom with adult participants recruited from the general public in Washington, DC. The evaluator showed participants materials from the exhibition and asked open-ended questions about what they had seen. The evaluator took handwritten notes during the interview. Participants were paid \$30 for their time (approximately 30 minutes).

Focus groups were conducted with the youth target audiences for the exhibition. RK&A hosted two focus groups with girls 10-17 years old recruited from the Girls Scouts of the Nation's Capital; and one focus group with BIPOC males 13-14 years old. As in the interviews, the evaluator showed the participants materials, asked open-ended questions, and took handwritten notes. Participants were paid \$50 for their time (approximately 60 minutes).

PARTICIPANT CHARACTERISTICS

In the pages that follow, findings are disaggregated into three participant categories. Disaggregation is important to uncover any issues of inequities or challenges specific to an audience. Findings are also reported at the aggregate level to highlight the predominant trend. The findings are reported following the flow of topics in the interview and focus group script.

Adults n = 9

From Washington, DC area

Most had visited NMAH before

Include individuals who identify as White, Black, Asian, and Native Hawaiian or Pacific Islander

25 to 54 years old

One-half male; one-half female

Female youth n = 12

From Washington, DC area

Majority had visited NMAH before

Include individuals who identify as White and Black

10 to 17 years old

Male youth n = 6

From Washington, DC

Majority had visited NMAH before

Include individuals who identify as Black or BIPOC

13 to 14 years old

ASSOCIATIONS WITH "GAME CHANGERS"

The current title for the new exhibition is "Game Changers."
What comes to mind when you hear "Game Changers"?



GAME CHANGERS

Aggregate of All Participants

Across all groups of participants, some thought Game Changers was about video games, such as changes and evolution in video gaming, largely because of the font used.

Adults

Used words and phrases such as "significant," "pivotal," "next generation ideas," "things that made a major difference," "disruptions in current course of action," "changes paradigms," "upends the current state."

Most referred to "Game Changers" as events/things rather than people.

Female youth

Used words and phrases such as a person who "made an impact on the world," "changed things," "fought for change and accomplished it."

Most referred to "Game Changers" as people.

Male youth

Used words and phrases such as "change really well."

Most referred to changes in video games and spoke in vague terms.

INTEREST IN DESCRIPTIVE TEXT

You are a Game Changer.

Game Changers use creativity and inventive thinking to change how we play our games. Game Changers, like you, are everywhere – athletes and inventors, scientists and artists, young and old.

Game Changers have specific interests, skills and abilities, but share a common passion to change sports for the better. Game Changers invent new technologies that push athletes to new heights, make sports safer, ensure that sports competitions are fair, and make sports more fun for more people to play. Sports do not exist without athletes. Sports do not exist without inventors.

Who can be a Game Changer? Everyone.

Who is a Game Changer? You are.

How will you change the game?

Aggregate of All Participants

Across all groups, some participants were reluctant to identify an interesting part of the text since they were not clear what they might see in the exhibition based on the text.

Adults

Many feel the text is “exciting” and “empowering.”

Many like the inclusivity of the language: “everyone” is a game changer–“young and old,” and “not just scientists, inventors, or experts.”

Female youth

Some are interested in innovation and change, which they consider a good thing.

Male youth

Similar to female youth, some feel the idea of change is exciting.

UNINTERESTING PARTS OF DESCRIPTIVE TEXT

You are a Game Changer.

Game Changers use creativity and inventive thinking to change how we play our games. Game Changers, like you, are everywhere – athletes and inventors, scientists and artists, young and old.

Game Changers have specific interests, skills and abilities, but share a common passion to change sports for the better. Game Changers invent new technologies that push athletes to new heights, make sports safer, ensure that sports competitions are fair, and make sports more fun for more people to play. Sports do not exist without athletes. Sports do not exist without inventors.

Who can be a Game Changer? Everyone.

Who is a Game Changer? You are.

How will you change the game?

Aggregate of All Participants

Some said they weren't particularly interested in sports, but they might be interested in the exhibition depending on what was included. Again, participants were unsure what they might see in the exhibition based on text alone.

Adults

One said the text overemphasized the importance of athletes to sports.

One said the text was repetitive.

Female youth

Some said the text is too long and repetitive.

Male youth

One said sports seems like a less important topic than the idea of Game Changers in other realms (i.e., "I am not saying sports isn't important...").

CONFUSING PARTS OF DESCRIPTIVE TEXT

You are a Game Changer.

Game Changers use creativity and inventive thinking to change how we play our games. Game Changers, like you, are everywhere – athletes and inventors, scientists and artists, young and old.

Game Changers have specific interests, skills and abilities, but share a common passion to change sports for the better. Game Changers invent new technologies that push athletes to new heights, make sports safer, ensure that sports competitions are fair, and make sports more fun for more people to play. Sports do not exist without athletes. Sports do not exist without inventors.

Who can be a Game Changer? Everyone.

Who is a Game Changer? You are.

How will you change the game?

Aggregate of All Participants

Many said that there were not any confusing aspects of the text, but they were unsure what they might see in the exhibition.

Adults

Two said they did not understand the statement, "Sports do not exist without athletes."

Female youth

Some did not understand the exhibition was about sports until halfway into the text.

Male youth

One said the idea of Game Changer seems exaggerated as related to sports.

REACTIONS TO STARTING LINE

As the evaluator showed the participants the exhibition materials section by section, the evaluator paused along the way for any top-of-mind reactions to the materials.



Aggregate of All Participants

Most did not have specific reactions or feedback to this section.

Adults

One liked seeing different sports represented in the beginning.

One wanted to see more people represented in sport.

Female youth

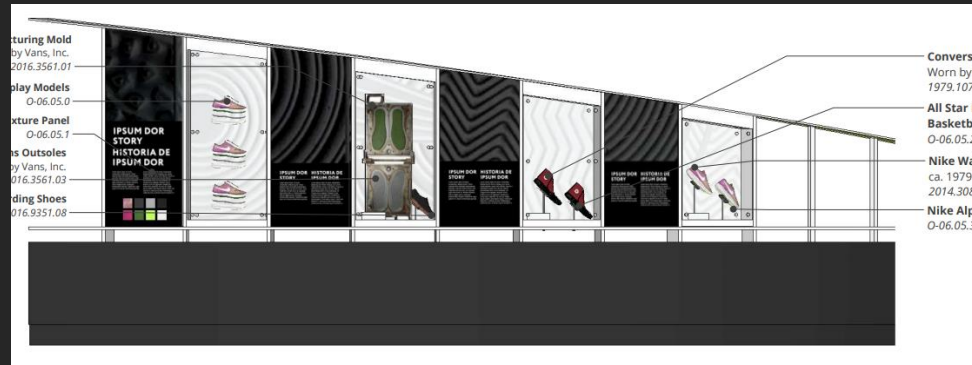
No specific feedback.

Male youth

One liked the openness of the space.

One liked seeing atypical sports, such as race car driving.

REACTIONS TO COMPETITIVE EDGE



Aggregate of All Participants

Many responded positively to this section with specific feedback presented below.

Adults

Several liked the sneaker area, often because of a personal connection to sneakers.

Several liked the concept of the interactive, designing a swimsuit for performance.

One female said it seemed to be a male-dominated exhibition so far. The one female she saw is represented as a model for swimsuit.

Female youth

Several liked the sneaker area and thinking about science behind them.

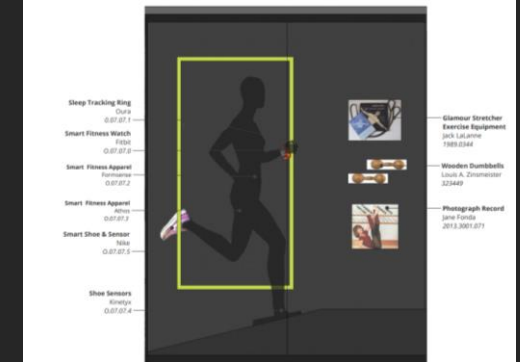
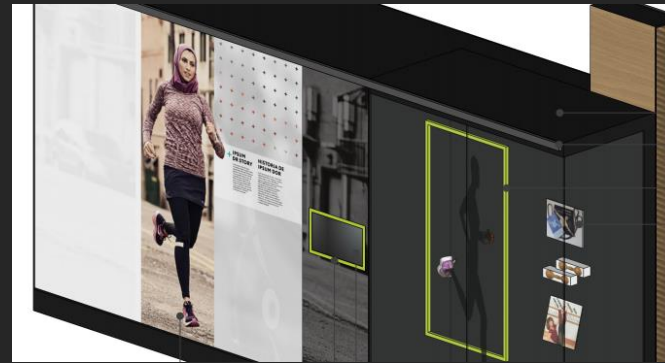
Several liked the interactive, but a few thought it could be more hands-on (not digital).

Male youth

Several liked the interactive piece but wanted to see even more interactives (because they imagine crowding).

One liked the story of Mike Schultz because of his overcoming physical challenges with invention.

REACTIONS TO HEALTH + SAFETY



Aggregate of All Participants

Participants had more top-of-mind feedback on this section than the past two sections in part because they were more comfortable speaking with the evaluator.

Adults

Two liked the inclusion of personal equipment for non-professional athletes, with one saying he has a sleep tracker.

One liked the story of Shawn Springs and moving on to invention after being an athlete.

One wanted to try the VR equipment used for training.

One called it the "football room," suggesting a narrow view of the content of the space.

One liked the inclusion of a woman in hijab to challenge stereotypes.

One female was concerned about female representation in this space saying females were only shown with accessories, which feels "fluffy."

Female youth

Two worried about lines waiting for the interactive.

One said the museum could include more about physiology in this area.

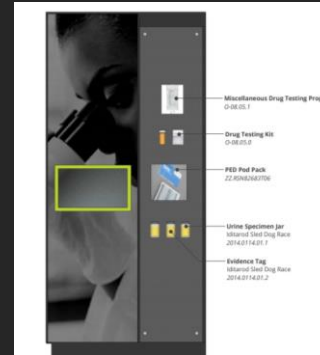
One liked the inclusion of women in a hijab.

Male youth

A few said there is too much focus on football in this space, "lots of helmets."

One wanted to see more people versus objects in the exhibition.

REACTIONS TO FAIRNESS + ACCURACY



Aggregate of All Participants

Many participants were intrigued by this section, but they (and youth in particular) also had feedback for how to make this section more relevant to them.

Adults

Two were positively surprised by inclusion of dog sled testing.

One said it was unfair to single out Lance Armstrong for doping when it is a pervasive issue in sports.

One worried about the interactive's accessibility for those who are short or have physical disabilities.

One interpreted the inclusion of the bicycle as discussing technological evolution of bikes.

One said drug testing felt out of place in this section about technology of games

One liked how this section does not hide issues.

Female youth

A few said it was interesting because they had not considered some of these things before.

One suggested considering an interactive that places individuals in a scenario where they decide the outcome.

One wanted to see discussion of gender fairness, including Title IX and gender pay gaps in sports, such as with the WNBA.

Male youth

One said he would be interested in debating rules of a game.

One wanted to see more people versus objects.

REACTIONS TO FUN + ACCESS



Aggregate of All Participants

Most participants responded positively to this section, responding with impromptu interjections like “wow,” “cool,” or other affirmative reactions as the evaluator described the section, and particularly Howard Head and Jog Bra inventors.

Adults

A few liked the Howard Head story; one called this story inspirational and one recalled having a Head tennis racket.

One female was concerned about female representation of women in “bikinis.”

One did not think the word “fun” was applicable, but suggest “no barriers,” “low barriers,” “widely accessible,” or “easy access.”

Female youth

A few were interested in handling the equipment, such as rackets, skis, and skateboards.

A few were concerned about wait time for the interactive.

One expected to see more focus on accessibility in this section since the section says “access.”

Male youth

A few like the Howard Head story because they liked that he wasn't a good athlete but wanted to make sports fun.

One liked seeing female-related stories because sports is not just for males

REACTIONS TO END ZONE



Aggregate of All Participants

Most participants did not have specific feedback on this section. As reported in reflections on all the materials, participants felt this space was less dynamic and interesting than the others.

Adults

One liked the idea that individuals could share their own inventive ideas.

Female youth

A few asked questions about the interactives.

Male youth

No specific comment.

REACTIONS TO LOOK & DESIGN

What do you think about the look and design of the space? Does it look like a space you would like to visit?

Aggregate of All Participants

Many participants liked the design of the space, with adults responding more positively than youth. Some adults and male youth had concerns about crowding in the space.

Adults

Most spoke positively about the look of the space, describing the space as "modern," "slick," "sleek," and "sporty."

One-half felt the space looked open, airy, and had good flow, while another one-half said some spaces felt crowded or claustrophobic and they worried about the wait time at interactives.

One suggested audio materials to enhance the exhibition experience, such as broadcast or stadium sounds.

Female youth

Most responded positively to the design, but one did not like the green and black colors (personal preference).

Several said the colors and design look futuristic and modern.

One expected a more outdoor look to the exhibition (thinking about sports being played outdoors).

Male youth

Most did not have an opinion on the look, but one said there is too much green (personal preference).

A few said, other than beginning and ending of the exhibition, the spaces appear cramped (particularly considering COVID-19 pandemic).

INTERESTING ASPECTS

What did you see that was interesting to you?

Aggregate of All Participants

Participants named a variety of things that they liked about the exhibition.

Adults

One-half were most interested in Fairness + Accuracy. One said they like to watch tech videos on YouTube about similar topics, one is interested in discussing gender verification tests based on news.

Several were interested in Fun + Access. Some generally liked the section as a whole, while one each mentioned the Howard Head story, invention of the Jog Bra, and the interactive.

Two like the sneaker portion of the exhibition, one discussing a personal connection to changing her running shoes based on technologies.

Female youth

A few liked the sneakers area because it feels relevant to them.

One liked the science focus in Fairness + Accuracy.

One liked Fun + Access because of the stories told there.

Male youth

A few liked learning how things are modified for people with disabilities.

One liked thinking about modifying sports to make them more fun as Howard Head did.

UNINTERESTING ASPECTS

What was not interesting to you? Or, what was least interesting to you?

Aggregate of All Participants

The majority of participants did not name something least interesting or named a miscellaneous component. The exception is the End Zone area, which adults found least interesting.

Adults

The majority said the End Zone was least interesting. One said it did not appear as dynamic and interesting as the rest of the exhibition.

One said the Health + Safety section was important but not as exciting to them.

One, who said she was a sports fan, said the fan stuff was least interesting to a broad audience since it is familiar.

Female youth

Several suggested the museum include an even broader range of sports, such as figure skating, gymnastics, ballet, dance, rowing, soccer, volleyball, and horseback riding

One said that Health + Safety was least interesting because of the helmet focus, suggesting they perceive the content of this area narrowly.

Male youth

One said the Fun + Access interactive did not seem interesting as interesting as the others.

One said the museum could include more popular sports like basketball and golf.

One suggested the museum show more team sports.

SEEING INVENTION IN THE MATERIALS

One of the goals for this exhibition is to help individuals connect with invention. In what ways did you see or think about invention in the exhibition materials?

Aggregate of All Participants

Most participants said they saw invention in the exhibition, but it seemed to be second to sports in their mind.

Adults

The majority said they saw invention in the exhibition as related to para-athletes, such as Mike Schultz, Arielle Rausin, and Marilyn Hamilton.

A few mentioned Howard Head.

A few mentioned the evolution of technologies, such as in swimsuits, sneakers, and monitoring technologies.

A few highlighted the creativity they saw across the exhibition to make changes in sports.

Female youth

A few said they would feel more connected to invention if it showed or let them participate in the processes of design and manufacturing.

Male youth

Similar to female youth, a few saw invention, but they said they would need to experience or participate in a process to make them feel inventive.

HOW IT FEELS TO BE CALLED A "GAME CHANGER"

Thinking about the text I showed you in the beginning, it says YOU are a game changer. What do you think about that?

Aggregate of All Participants

Most participants were hesitant to identify as a Game Changer because of their literal interpretation of being a Game Changer in sports (despite their broader understanding of Game Changer as evidenced in earlier findings).

Adults

Some did not feel like a Game Changer because of their literal interpretation of changing sports.

Some drew parallels between what they saw in the exhibition and their inventive potential. For example, one said Howard Head story made him think about his work. He has not been able to write code for a revolution video game, but maybe he could design something to help people write code faster.

One said they left feeling like they won't be a Game Changer, but they feel the world is more malleable than you might think.

Female youth

A few assumed the text means that the exhibition would be very interactive

One said Game Changers seem like people who reached their goals so not sure it matches.

One said they feel inventive in her own ways but not a Game Changer with sports.

Male youth

Again, a few saw invention but would need to experience or participate in a process to make them feel inventive and like a Game Changer

OTHER FEEDBACK

Is there anything else that you want to share with the museum?

Adults

A few liked how the exhibition was “more than football and basketball.”

A few liked that the exhibition is bilingual English and Spanish.

Female youth

Most said it is very important to them that the exhibition is inclusive. They complimented the current materials for including a woman with a hijab, individuals with physical disabilities, and including Spanish language text throughout. They also encouraged the museum to include more women, children, individuals of various skin colors, and individuals with different body types.

They wanted to see more sports that they participate in, including horse back riding, gymnastics, rhythmic gymnastics, ice skating, volleyball, tennis (although some tennis items were included), bicycling (particularly it might be better to include bike helmet instead of football helmet).

They wanted to see women represented in male-dominated sports, so women in basketball or football.

Male youth

No additional comments.