



EXHIBITS THAT ENDURE THE TEST OF TIME

Considering Longevity from Concept Through Close-Out

WHO WE ARE

Moderator: Cathlin Bradley, Kubik Maltbie, Inc.

Expert Panelist 1: Sarah Myers, The Children's Museum of Indianapolis

Expert Panelist 2: John Shaw, Museum EXP

Behind the Scenes Expert: Scott Wolfram, Working Studio

BEFORE THE SESSION

- We developed a survey to ask questions about creating exhibits
- Questions range from content development to maintenance
- We collected responses from across the industry
- We analyzed the results

DURING THE SESSION

- Today we'll review the results of the survey... "Family Feud" Style!
- The moderator will ask questions related to exhibit creation
- Two participants will have a chance to guess the most popular answer
- The panel will discuss the results
- You will have an opportunity to test your knowledge
- We will make time for questions



LET'S GET STARTED!

QUESTION 1

Name a step in the exhibit development process.



1

4

2

5

3

6

QUESTION 1

SURVEY SAYS

Note: the results shown reflect the
TOP (6) answers received.

Numbers are percents.



Prototyping

28

Discovery

5

Design
Development

10

Schematic
Design

5

Concept Design

10

Value
Engineering

5

START WITH A SOLID CONCEPT...THEN TEST!

- Know your audience and their needs
- Develop a Big Idea or Vision Statement to guide the project
- Consider longevity of topic and experience
- Prototype, test, and evaluate throughout the process
- Manage schedule and budget closely - time lost early in the schedule can have costs later on
- Choose project team members and vendors that can work well together

Pre-Concept

Concept Design

Schematic Design

Design Development &
Prototyping

Fabrication Drawing

Fabrication

Installation & Operations

QUESTION 2

How much does the average interactive exhibit cost?



1

4

2

5

3

6

QUESTION 2

SURVEY SAYS



FAMILY FEUD
Live
MUSEUM EDITION

\$20,000 or more

68

\$5,000 - \$9,999

5

\$10,000 - \$19,000

22

\$0 - \$4,999

5

INTERACTIVE EXHIBITS ARE A BIG INVESTMENT

- The truth is...it varies!
- Consider a balance of experiences - interpretive, mechanical, and digital
- Off-the-shelf vs. custom
- Off-the-shelf is cheaper, but may be discontinued or become obsolete
- Custom is more expensive, but it can always be procured
- Consider cabinetry that is modular and/or changeable over time to accommodate changes in hardware that may need to be replaced
- Don't forget! While you may consider an exhibit to be permanent, there should always be room for changes

QUESTION 3

What type of exhibits require the most maintenance?



1

4

2

5

3

6

QUESTION 3

SURVEY SAYS



Mechanical

22

Hybrid Physical /
Digital

17

Tech / AV
/Media

17

Poorly Designed

5

Water

17

Traveling

3

INTERACTIVE EXHIBITS REQUIRE MAINTENANCE

- Maintaining existing exhibits is always less expensive than buying new exhibits!
- Focus on quality
 - If working with outside fabricators, carefully review their credentials
 - Ask for and follow up with references
- Consider materials and fabrication methods that offer long term flexibility
- Make sure you have a maintenance manual for EVERY exhibit
 - List all purchased components and sources
 - List timeline or replacing parts that will wear out
- Consider the speed of Technology

QUESTION 4

Name an important skill set for exhibit maintenance staff to have.



1

4

2

5

3

6

QUESTION 4

SURVEY SAYS



Problem Solving

18

Carpentry /
Fabrication

8

Troubleshooting
/ Diagnostic

15

Mechanical

8

Patience

10

Organization

3

IT'S NOT JUST ABOUT HARD SKILLS

- Mechanical knowledge and fabrication skills are important
- However, “soft” skills can prove even more valuable
 - Problem Solving & Research
 - Patience & Curiosity
 - Collaboration
 - Good Judgement
 - Networking
- Being able to figure out what’s wrong is the first step in solving exhibit problems
- Be wary of someone who wants to re-design everything

- Electronics - use a multimeter
- Carpentry - use power tools & cut straight lines
- Mechanics - Use hand tools & maintain moving parts
- Knowledge of material properties
- A/V & lighting
- Computer systems and software
- Project Management
- Engineering & Design
- Electrical
- Plumbing

QUESTION 5

What percentage of the fabrication budget should be set aside for maintenance and operations?



1

4

2

5

3

6

QUESTION 5

SURVEY SAYS



0% - 5%

7

26% - 50%

8

6% - 10%

35

51% or more

5

11% - 25%

45

Maintenance??

0

MAINTENANCE IS LESS EXPENSIVE THAN NEW EXHIBITS!

- Warranty vs. maintenance
- The type of exhibits you choose will impact the cost of maintenance
- Neglecting regular maintenance can be costly!
- During design, consider wear points and durability of finishes
- For interactives, select components that are easy to replace instead of custom produced, if possible
 - Ex. Bearing that can be ordered from McMaster-Carr vs. custom part
 - Be sure to design flexibility into anything that requires media hardware

QUESTION 6

Name a small power tool that every exhibits shop should have.



1

4

2

5

3

6

QUESTION 6

SURVEY SAYS



Drill / Screw Gun

58

Router

8

Impact Driver

14

Palm Sander

3

Dremmel

8

Radial Arm Saw

3

THE RIGHT TOOLS ARE IMPORTANT...

- Building and maintaining exhibits requires the right tools
- Clearly, a drill or screw gun is a necessity!
- Other basic tools are also helpful for maintaining your exhibit
- It's also a good idea to keep a set of spare parts for mechanical exhibits that require routine maintenance

QUESTION 7

Name a durable, lightweight material for building exhibits.



1

4

2

5

3

6

QUESTION 7

SURVEY SAYS



Aluminum	26	MDF	10
Starboard (HDPE)	15	Plywood	10
Sintra	13	Durable & Lightweight Doesn't Exist!	3

...AND SO ARE THE RIGHT MATERIALS

- The survey responses were write-in and not multiple choice
- The answers were surprising!

This doesn't exist!

- While aluminum was the most common response, it's probably not the best material for building children's exhibitions
- Both MDF and Plywood are great options for building cabinetry and structures
- Starborad (HDPE) is a great option for water exhibitions or high-traffic areas
- Sintra is certainly lightweight and durable, but not a great option for BUILDING exhibits - better for graphics
- Think about material trade offs!

QUESTION 8

Name a way to interact with technology that's an alternative to a touchscreen.



1

4

2

5

3

6

QUESTION 8

SURVEY SAYS



Kinect or similar

45

RFID

5

Push Button

15

Virtual Reality

5

Voice Activation

8

QR Code

3

LOOK BEYOND THE SCREEN

- Kids are inundated with screens!
- Don't use tech for the sake of tech
 - Consider where technology can enhance an experience or make deeper connections
 - Hardware becomes obsolete quickly and can be expensive to replace
- Offer experiences that kids can't have on a screen at home
 - We don't have budgets to compete with apps and video games
 - We DO have opportunities for authentic and immersive play
- Consider multi-user experiences and intergenerational play
- Consider how tech interactives can extend the experience into the home

QUESTION 9

Name a common material on which graphics are printed.



1

4

2

5

3

6

QUESTION 9

SURVEY SAYS



Sintra	45	High Pressure Laminate	25
Paper (laminated)	2	Plywood	1
Acrylic (second surface)	12	Other	15

DURABILITY VS. ECONOMY

- Sintra is a great option for inexpensive and somewhat durable graphics
 - Good for wall signage and graphics that are not touchable
 - Sintra is soft and easy to scratch
 - It is also lightweight and commonly stocked
- High Pressure Laminate
 - Great for touchable graphics
 - Can be fairly expensive
 - Lead times are long!
- Acrylic
 - Good for wall signage and graphics that are not touchable
 - Great for graphics that include photos - good clarity
 - Scratches easily
 - More expensive than Sintra

QUESTION 10

What's your go-to method for hanging graphics?



1

4

2

5

3

6

QUESTION 10

SURVEY SAYS



Cleat - Z-Clips

63

Screws / Bolts

5

Velcro

18

Cable

3

VHB

10

Other

1

FLEXIBILITY IS KEY!

- Consider how often you expect to change your graphics
- Cleats and Z-Clips are sturdy yet allow you to change graphics quickly and easily
- Velcro can be a flexible option, but can also cause damage to walls when removed
- Bolts and screws can be a good option if hardware is hidden
- Beware of over-using VHB if you ever want to remove the graphic!



LIGHTNING ROUND!

LIGHTNING ROUND 1

You want to create an exhibit concept to request funding from a donor.

- Where do you start?
- What information do you need?
- How will you present it?

LIGHTNING ROUND 2

You are planning an outdoor exhibition.

- What materials will you choose?
- What are some of your maintenance and safety considerations?

LIGHTNING ROUND 3

You'd like to create a digital exhibit.

- How will you make it a different experience than what visitors can get at home on their phone, tablet, or computer?



QUESTIONS?

KEEP IN TOUCH!

Cathlin Bradley
cbradley@kubikmaltbie.com

John Shaw
john@museumexp.com

Sarah Myers
sarahm@childrensmuseum.org