


Mobile Usage at the National Air and Space Museum



 Smithsonian Institution

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Abstract

The Office of Policy and Analysis (OP&A) conducted a study of mobile usage at the National Air and Space Museum (NASM) during April and May 2013. The results reported here are based on the analysis of exit surveys completed by visitors leaving the museum. 304 completed surveys were collected from the 510 visitors intercepted (response rate of 59%).

The focus of the study was to determine the extent to which visitors to the National Museum of Air and Space (NASM) have smartphones that can access the internet, how they are using their devices in the museum and their satisfaction with the museum experience.

The results of the study were compared with a similar study conducted at NASM in 2010. The 2013 study found that increasingly visitors are carrying smartphones at the museum. The majority of smartphone users are using their device to take photos. The study also found that the overall experience rating of the museum is improving. Ratings of aspects of NASM show two areas of current weakness, *Access to the internet* and a *Good place to spend time with others*. In this study, OP&A makes recommendations on the role mobile technologies might play in the future to improve visitors' experiences at NASM.

Preface

Providing useful information and analyses to Smithsonian offices and museums is a core mission of the Office of Policy and Analysis (OP&A). This study, *Mobile Usage at the National Air and Space Museum*, was part of our continued collaboration with the Smithsonian's Mobile Strategy and Initiatives unit and the National Air and Space Museum (NASM). This study was conducted to provide a baseline of internet usage and access at NASM.

The OP&A study team worked closely with Nancy Proctor, Head of Mobile Strategy and Initiatives to design the study and questionnaire. We are grateful to have had the opportunity to work with Nancy and her staff, as well as NASM staff, on this project.

In OP&A, Zahava Doering, Andrew Pekarik and Sarah Block designed the study. Sarah Block was responsible for scheduling and coordinating data collection. Several OP&A interns and staff assisted with data collection. Sarah Block and Andrew Pekarik analyzed the data and produced the creative presentation of results and conclusions. Zahava Doering assisted in compiling the report materials.

I thank them all for their work.

Whitney Watriss
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Methodology

The focus of the study was to determine the extent to which visitors to the National Museum of Air and Space (NASM) have smartphones that can access the internet, how they are using their devices in the museum and their satisfaction with the museum experience.

A brief 10 question survey (see Appendix A) was developed to collect this information from visitors exiting the museum. Between Tuesday, April 30 and Sunday, May 12, 2013 a random sample of 518 visitors were intercepted at both the Mall and Independence Avenue museum exits. Data were collected at different times of the day on different days. The survey team administered the survey for about 15 hours. Of the total intercepted, 510 visitors were eligible for the survey and 304 visitors completed it, yielding a response rate of 59%. While we are not certain why the response rate was relatively low, we surmise that it can be attributed to language barriers and the high volume of crowds due to the many school groups. We cannot be certain that the opinions of those who responded are the same as those who did not.

Data were processed by OP&A and analyzed using SPSS software.

This report includes the results of the survey in the form of a presentation that was made at NASM in the summer of 2013.

Presentation of Results

Smartphone usage is high.



**7 of 10 NASM visitors were carrying smartphones
Nearly all of them used them during their visit**



2 in 10 only took photos



1 in 10 only looked up info about something in the museum



1 in 10 only used it for something unrelated to the visit



3 in 10 used their smartphones in multiple ways

Note:

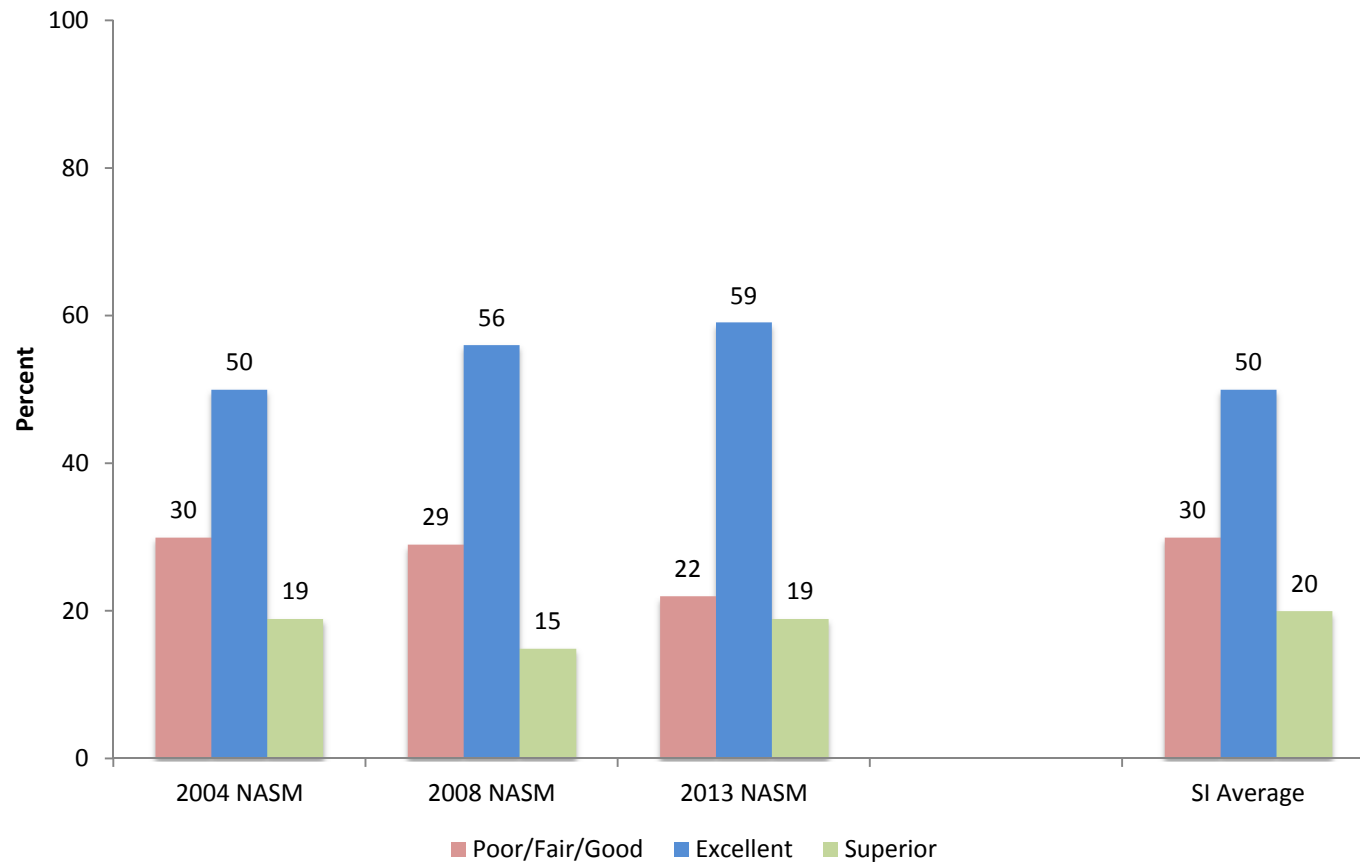
In 2010, 4 in 10 NASM visitors were carrying smartphones.

If that rate of growth were to continue, 10 in 10 would be carrying one by 2017.

Ratings of Overall Experience at NASM are improving among all visitors.

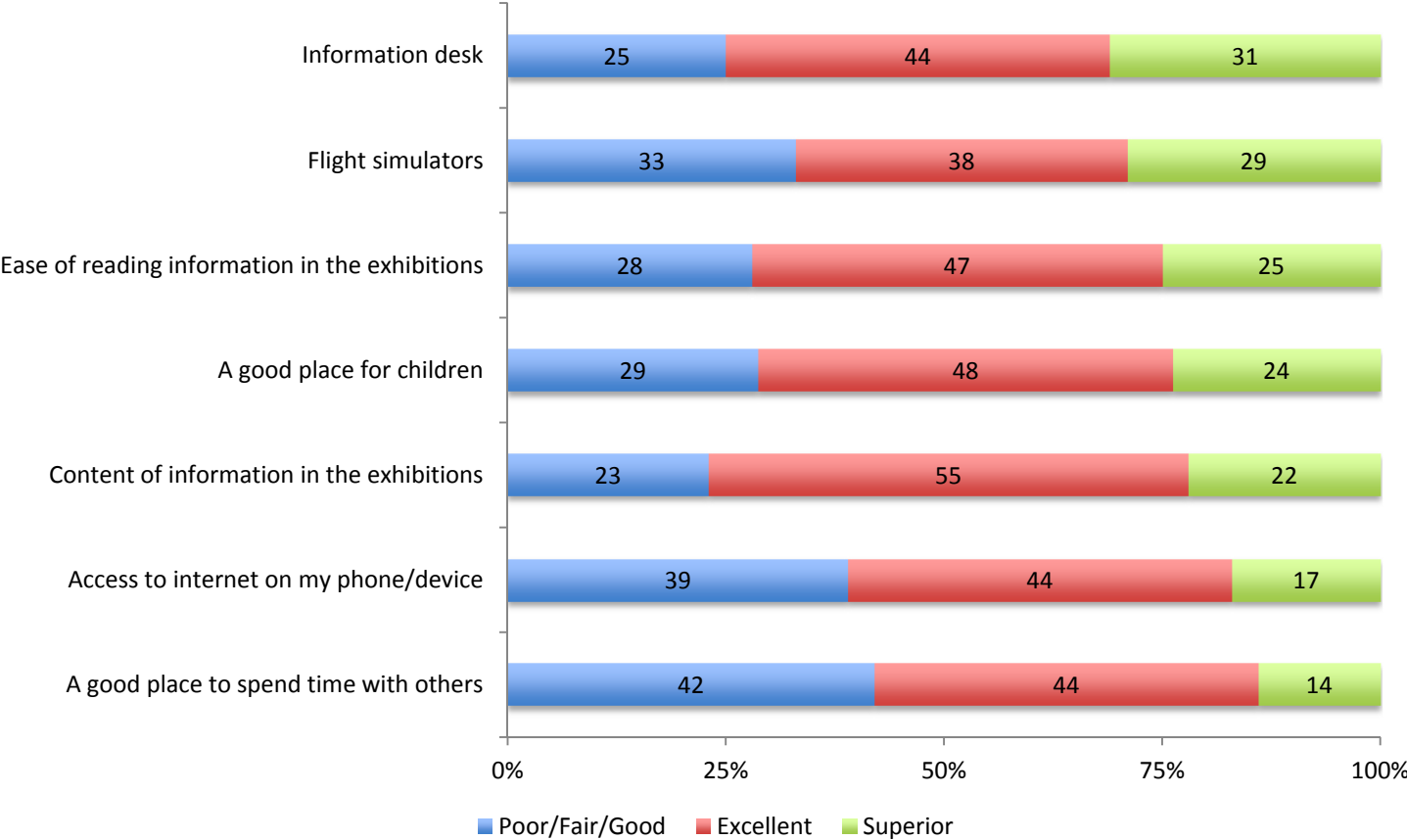
In the past ten years *Excellent* ratings have **increased** to above the Smithsonian average, and *less-than-Excellent* ratings have **declined**.

But *Superior* ratings have stayed close to the Smithsonian average.



Ratings of aspects of NASM show two areas of current weakness.

Access to internet and *a good place to spend time with others* received the lowest ratings.*



*Among all visitors who used/rated the item

Which improvements could increase Superior Overall Experience ratings?

Among the seven aspects rated by visitors, only two showed a statistically significant association between the rating of the aspect and the Overall Experience rating. In other words, visitors were especially sensitive to these two dimensions when evaluating their overall experience in NASM.

A good place to spend time with others

Those who rated *good place to spend time with others* Superior were **six times** more likely to rate their overall experience as Superior compared to other visitors.

Ease of reading information in the exhibition

Those who rated *ease of reading* Superior were **seven times** more likely to rate their overall experience as Superior compared to other visitors.

Recommendations for the future of mobile usage at NASM:

In considering what role mobile technologies might play in the future of NASM these findings suggest two possibilities that could have a bottom-line effect on the quality of the NASM experience among a majority of visitors.

- New mobile offerings that would inspire social, on-site experiences within and among visit groups.
- New mobile offerings that would make it easier to get information in exhibitions, whether through download onto their device, augmented reality, audio, etc.



National Air and Space Museum Visitor Study Spring 2013

Is this your first visit to this museum,
the National Museum of Air and Space?

No Yes

Please rate your overall experience at
this museum today.

Poor Fair Good Excellent Superior

***Do you have a cell phone
that can access the Internet?**
[Mark one or more]

No Yes, and it also runs apps
 No, but someone with me does Yes, and I/we have it here
 No, but I/we plan to in 6 months Yes, but I/we don't have it here

**IF YES, how did you use it
today in the museum?**
[Mark one or more]

Arranged to meet with friends in/near museum
 Commented on my visit to friends/others
 Contacted someone I know to ask about something I saw here
 Looked up info about something I saw here
 Shared my location with others
 Shared photos or info prompted by my visit
 Took photos for myself or to share later Other (Please specify):
 Used phone for something unrelated to visit _____

Please rate the following aspects of your
visit in this museum today:

**Not
Applicable** **Poor** **Fair** **Good** **Excellent** **Superior**

A good place for children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A good place to spend time with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to internet on my phone/device	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Content of information in the exhibitions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of reading information in the exhibitions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flight simulators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Information desk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**Which of these did you use during
your visit to this museum?**
[Mark one or more]

None of these Internet Search (like Google) Twitter
 Facebook Maps/GPS Wikipedia
 Foursquare Pinterest Other
 Instagram This museum's website _____

***Where do you live?**

United States Specify ZIP code:
 Other country Specify: _____

***What is your age?**

***What is your sex?**

Male Female

***With whom are you visiting?**
[Mark one or more]

I am alone Adult(s) Youth under 18

Thank you for your time and assistance!

Session

Segment

1 2 3

Status

C R L I ID

Appendix B: Frequency Distributions (In Percentages)

All Visitors

Smart-phone Visitors only

Is this your first visit to this museum, the National Museum of Air and Space?

No	43	47
Yes	57	53

Please rate your overall experience at this museum today?

Poor	0	0
Fair	2	3
Good	20	19
Excellent	59	57
Superior	19	21

Do you have a cell phone that can access the Internet?

No	22	0
No, but someone with me does	2	3
No, but I/we plan to in 6 months	1	0
Yes, and it also run apps	53	75
Yes, and I/we have it here	16	22
Yes, but I/we don't have it here	5	0

If yes, how did you use it today in the museum?

Took photos for myself or to share later	33	44
Looked up info about something I saw here	13	17
Shared my location with others	12	16
Shared photos or info prompted by my visit	11	15
Used phone for something unrelated to visit	12	15
Arranged to meet with friends in/near museum	8	11
Commented on my visit to friends/others	8	9

Contacted someone I know to ask about something I saw here		3	4
	Other	7	9
Which of these did you use during your visit in the museum?			
	None of these		54
	Internet search (like Google)		19
	Facebook		15
	Maps/GPS		11
	This museum's website		5
	Wikipedia		4
	Instagram		3
	Twitter		3
	Foursquare		1
	Pinterest		1
	Other		6
Where do you live?	DC Metro Area	6	6
	Elsewhere in the United States	70	78
	Other Country	24	17
What is your age?	18-29	27	28
	30-39	26	29
	40-49	19	19
	50-59	15	14
	60-69	8	7
	70+	4	4
	Average Age	40.2	39.2
	Median Age	37	36
What is your sex?	Male	43	40
	Female	57	60
With whom are you with?	I am alone	19	21
	Adults	70	68

Please rate the following aspects of your visit in this museum today:		Ratings (only those who rated the item)				
(All Visitors)	Rated this item	Poor	Fair	Good	Excellent	Superior
Information desk	57	0	2	23	44	31
Flight simulators	35	1	6	26	38	29
Ease of reading information in the exhibitns	99	0	2	26	47	25
A good place for children	91	1	4	24	48	24
Content of information in the exhibitions	97	1	4	18	55	22
Access to internet on my phone/device	62	1	9	29	44	17
A good place to spend time with others	97	1	8	33	44	14
(Smartphone visitors only)	Rated this item	Poor	Fair	Good	Excellent	Superior
Information desk	55	0	2	18	46	34
Flight simulators	35	0	8	22	37	33
Ease of reading information in the exhibitns	100	0	1	28	46	24
A good place for children	92	1	5	22	51	21
Content of information in the exhibitions	98	1	3	18	57	21
Access to internet on my phone/device	72	2	8	30	41	20
A good place to spend time with others	99	1	8	32	43	16