

Evaluate the Interactives at TPM and MR

Presented by:

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The
Postal
Museum

Introducing the Team



WPI



Cole Flegel

- Robotics Engineering



Huaxin Yang

- Management Engineering



Tom Perry

- Biology & Bio-technology

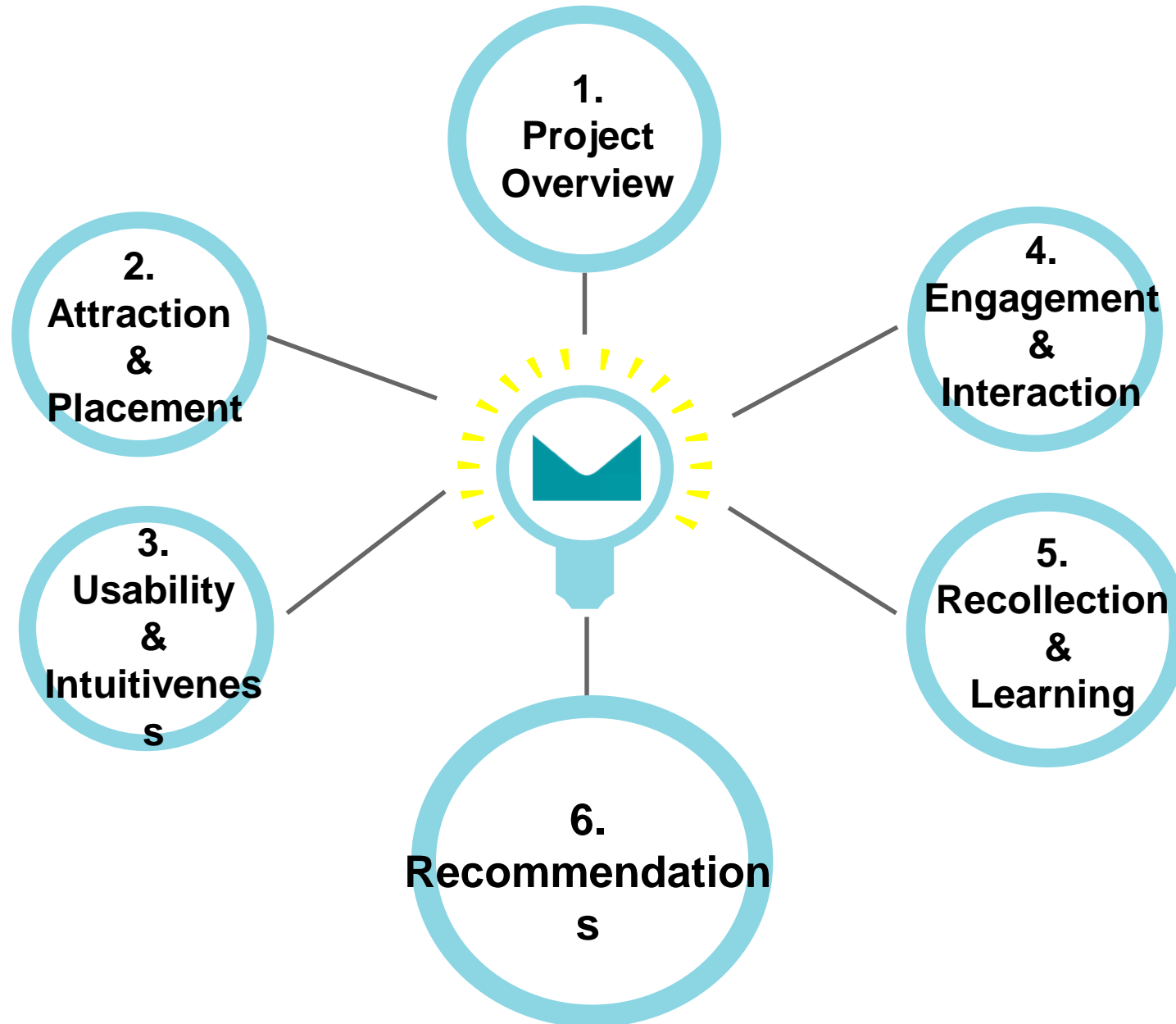


Ziheng (Leo) Li

- Computer Science & Electrical Engineering



Report Map



We are here
because TPM
...

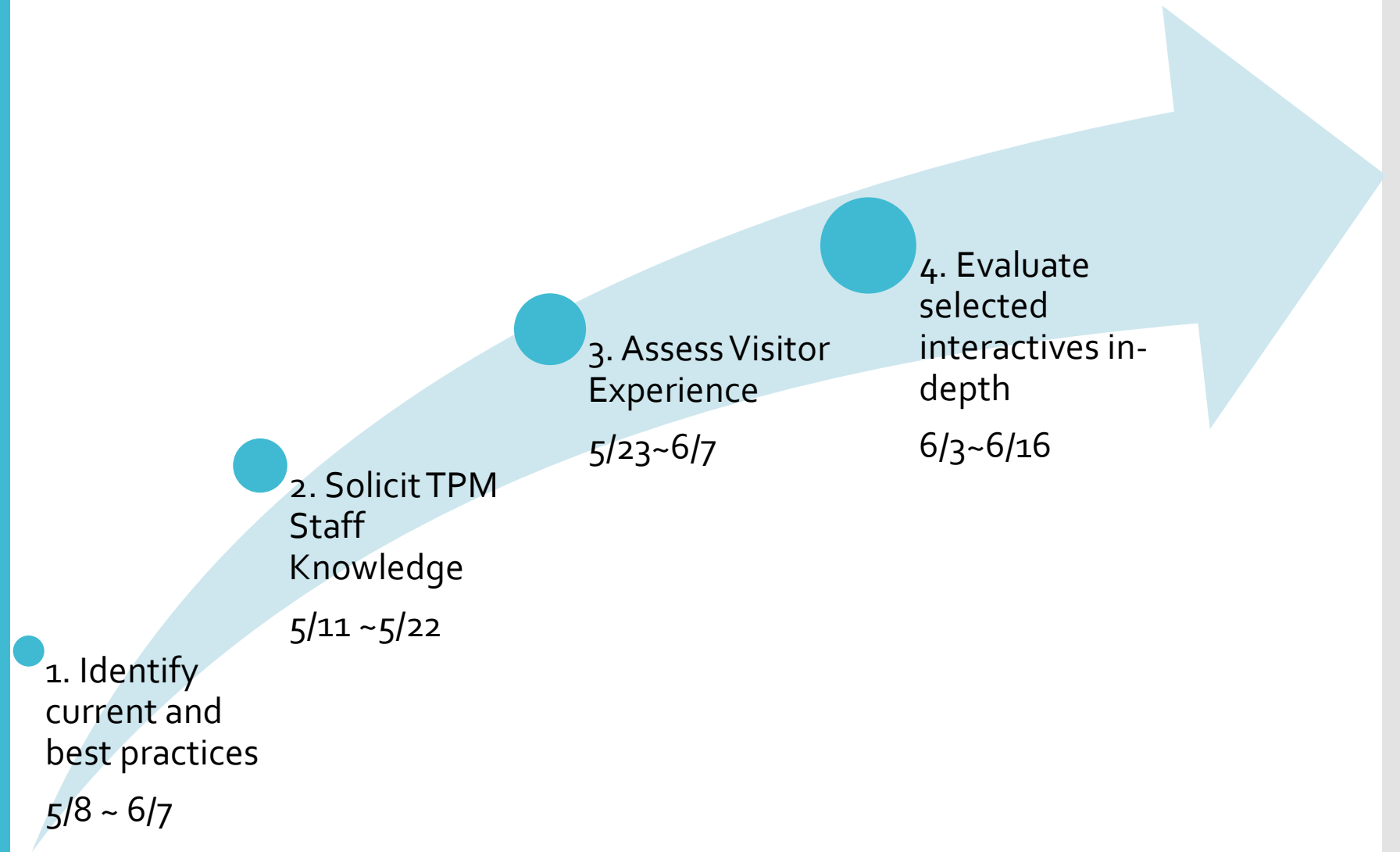
Opened July
28, 2017

Holds large
number of
interactive
exhibits

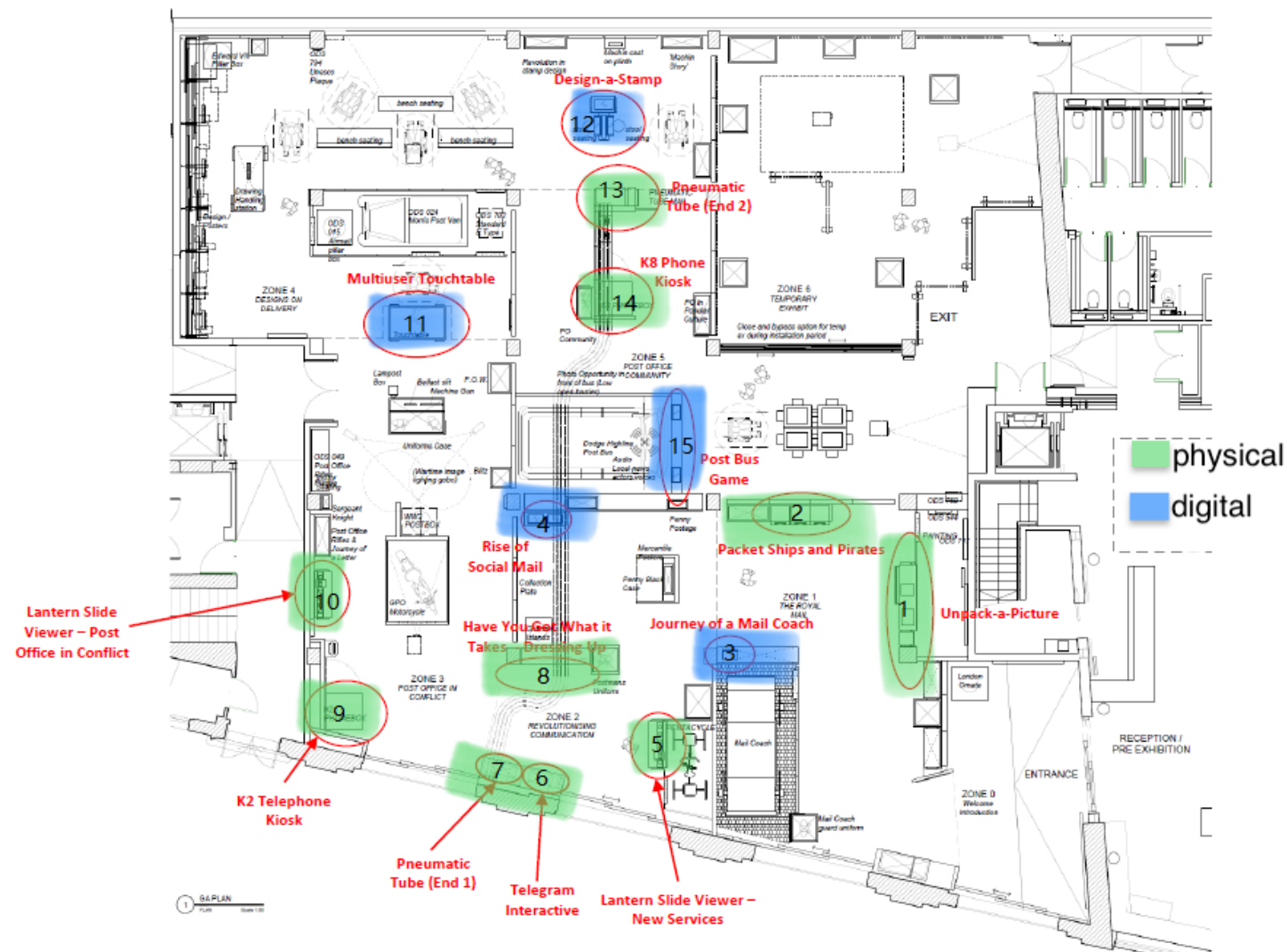
Yet to conduct
a formal
evaluation of
interactives

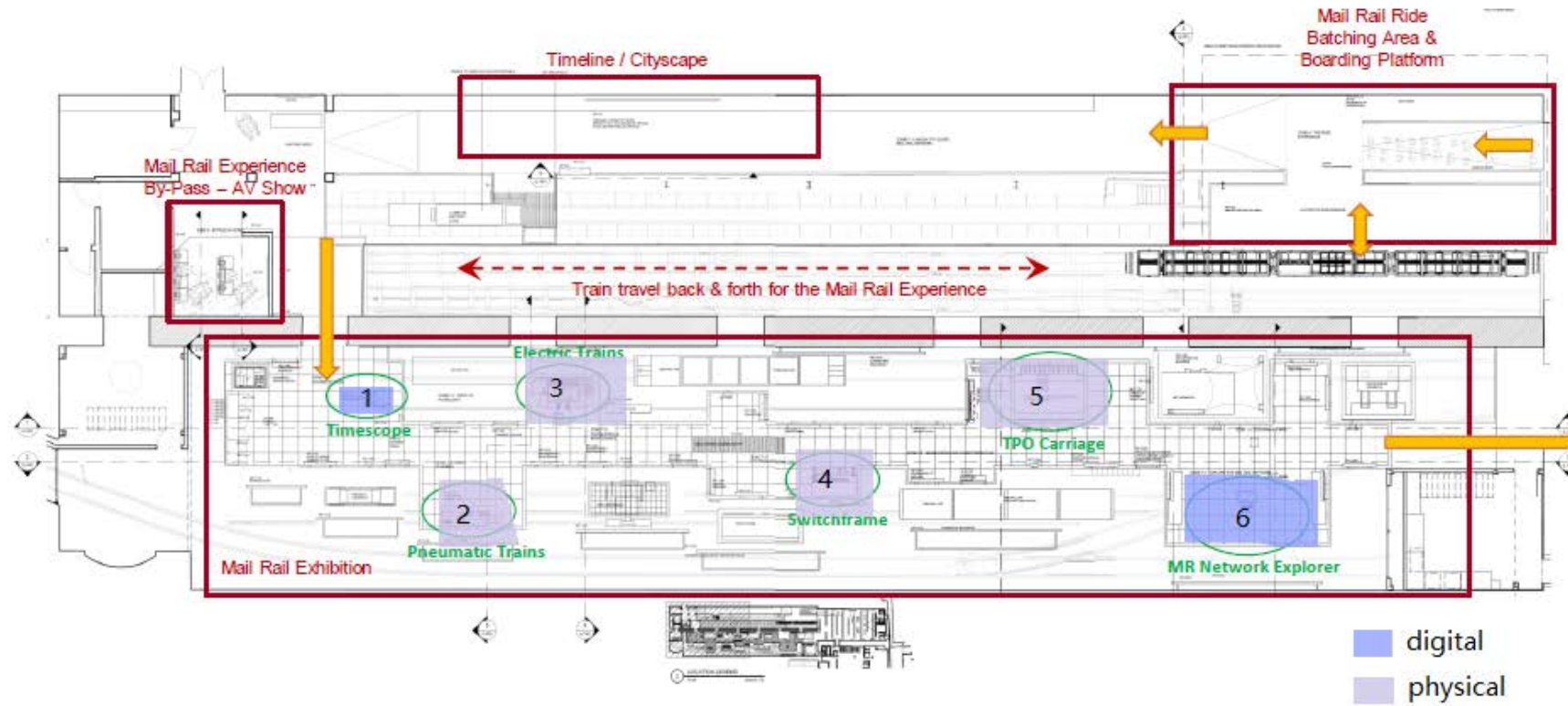


We did...



TPM Layout





MR Layout

Attraction & Placement

Heat-map

- Where do visitors linger?
- How attractive are for each exhibit?

Trace-map

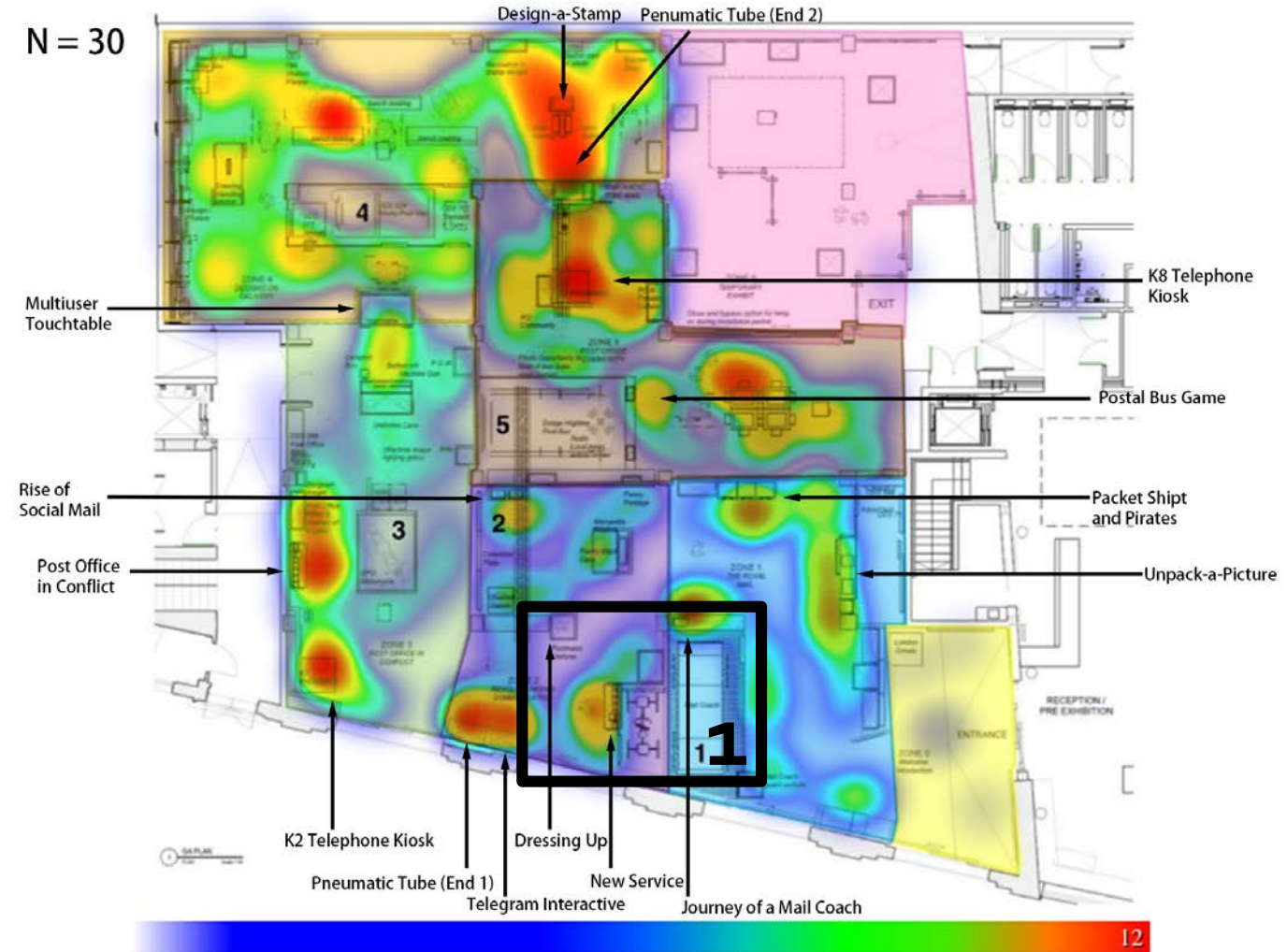
- How do visitors navigate through the gallery?
- What's the traffic flow for each exhibit?

Scoring

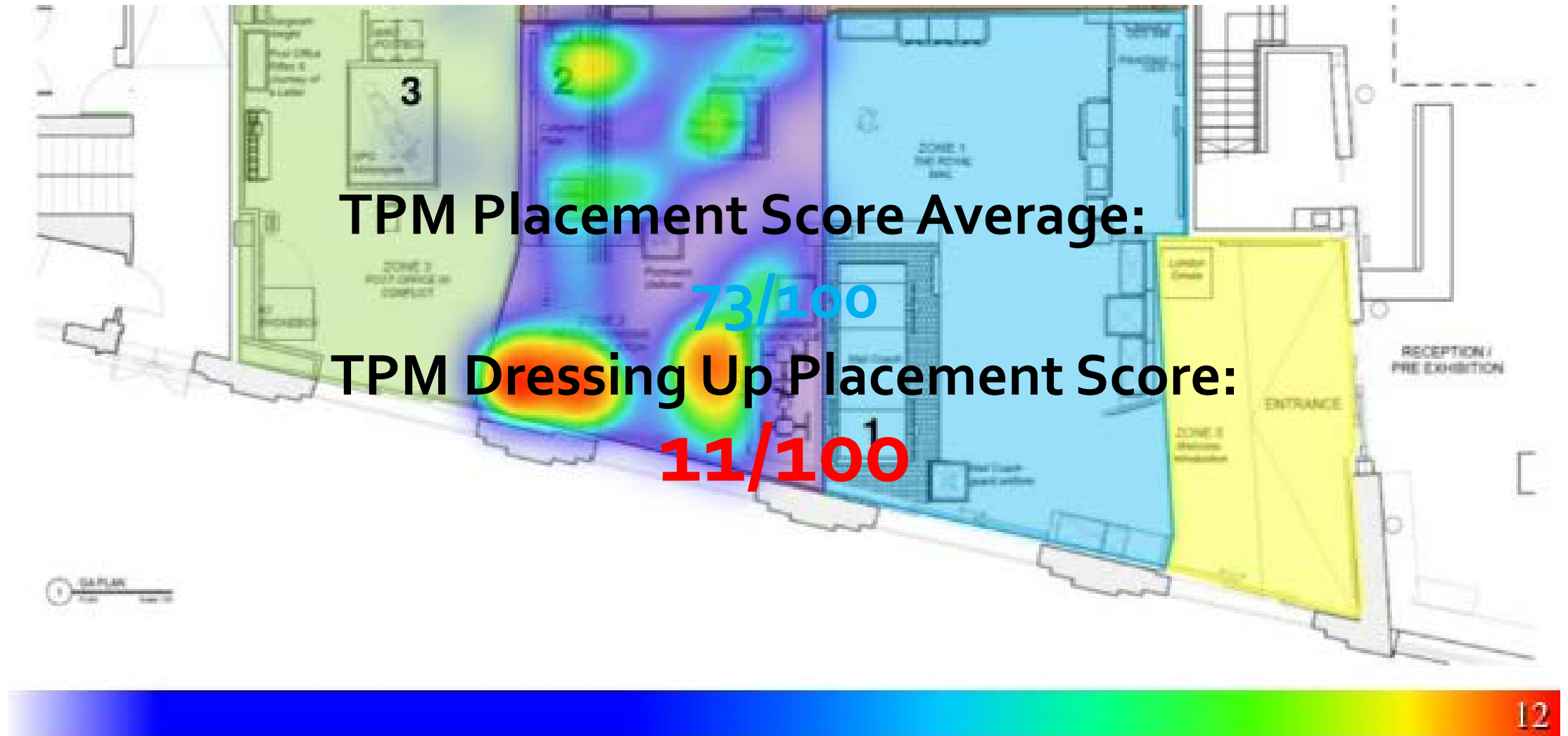
- Attraction Score
- Placement Score

MR Heat & Trace Map

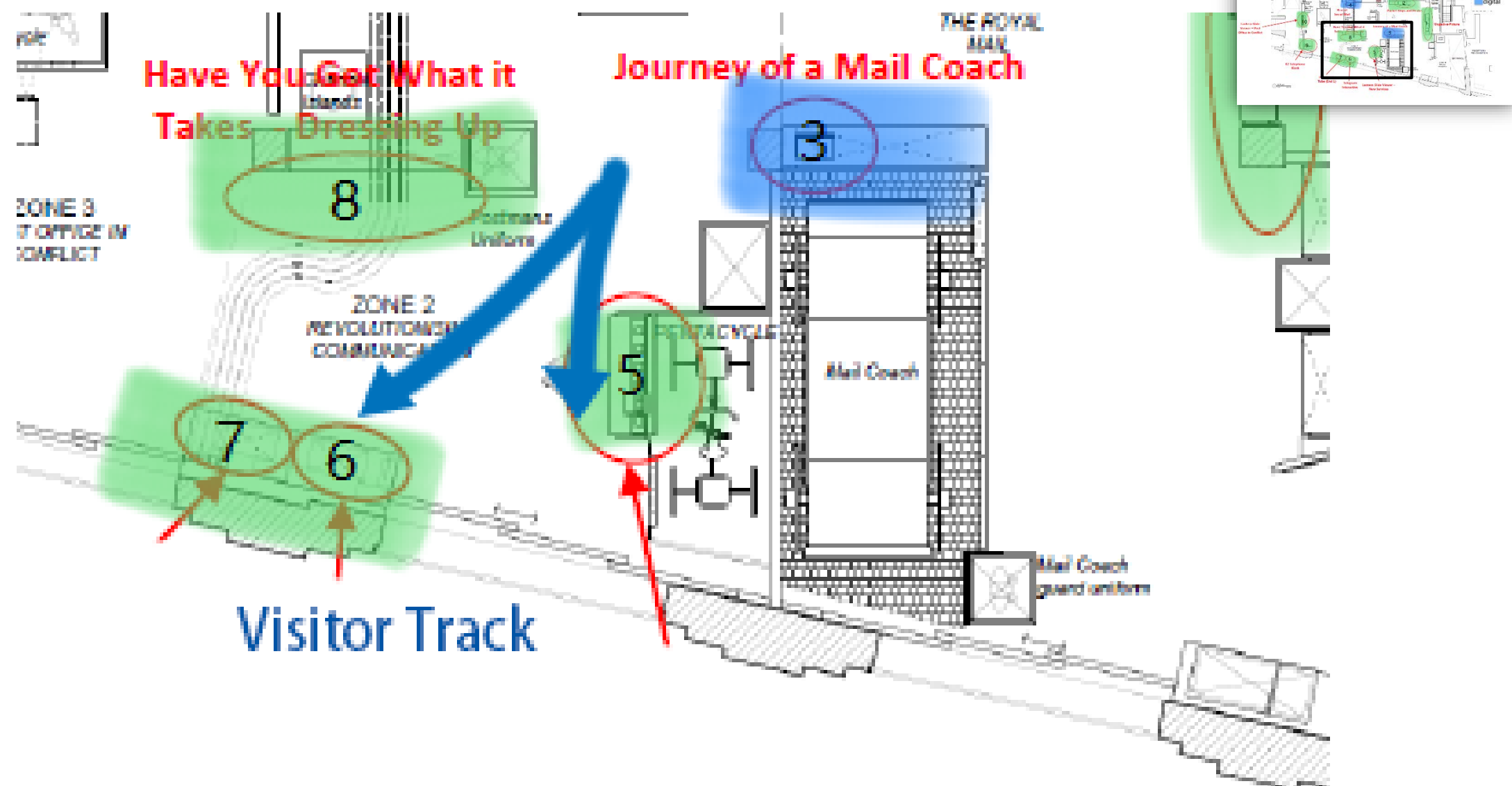
1



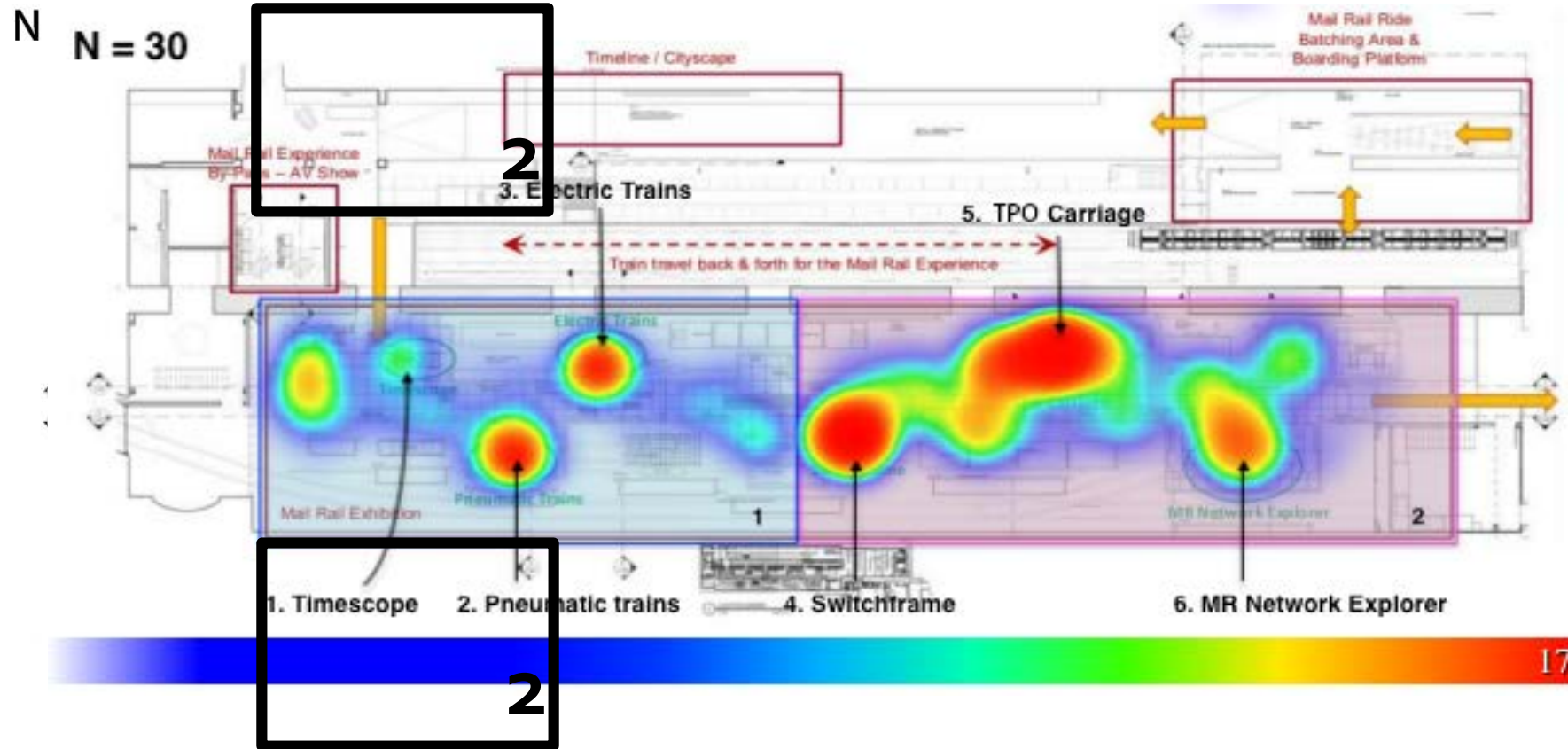
Issue 1: TPM Dressing Up



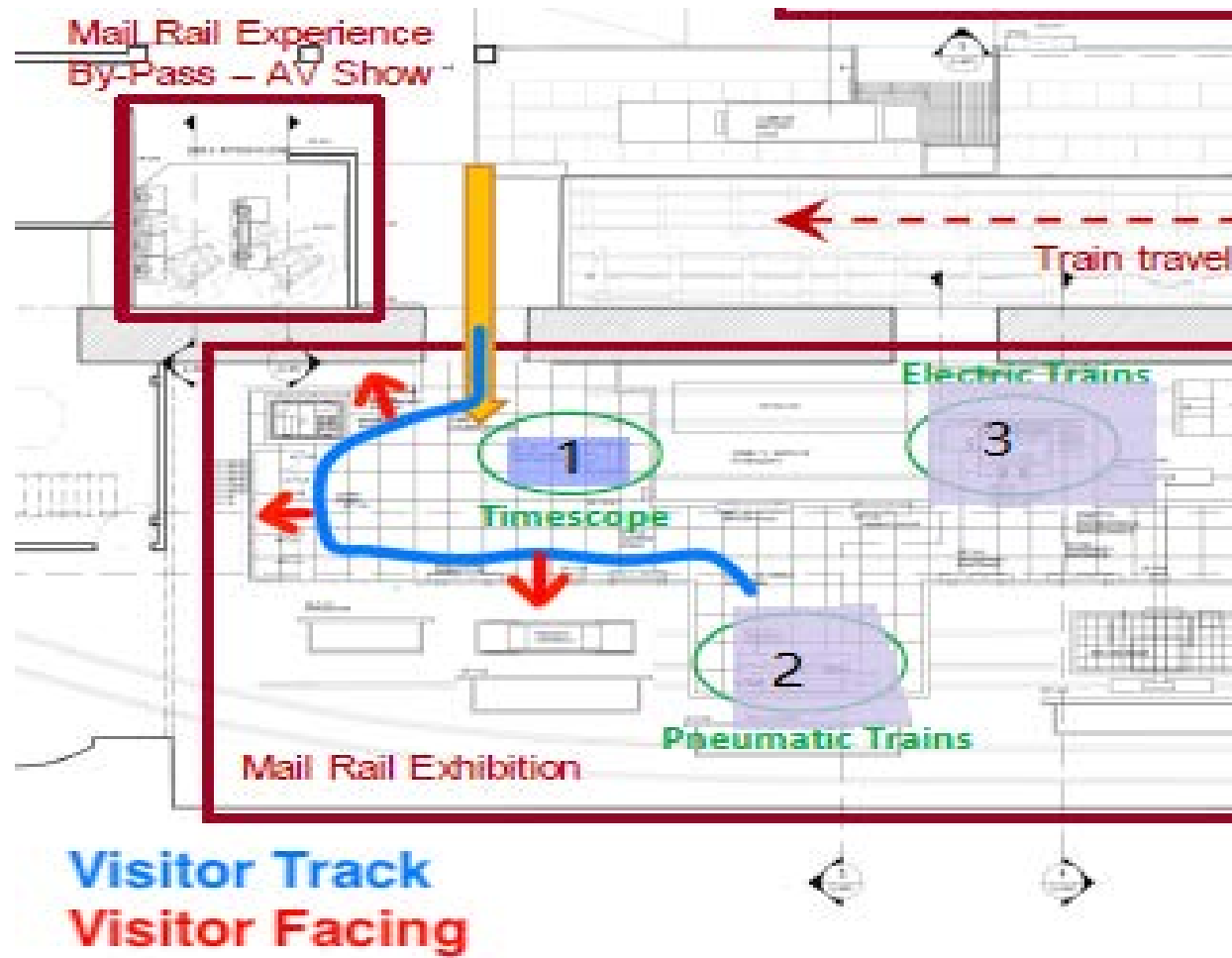
Issue 1: TPM Dressing Up



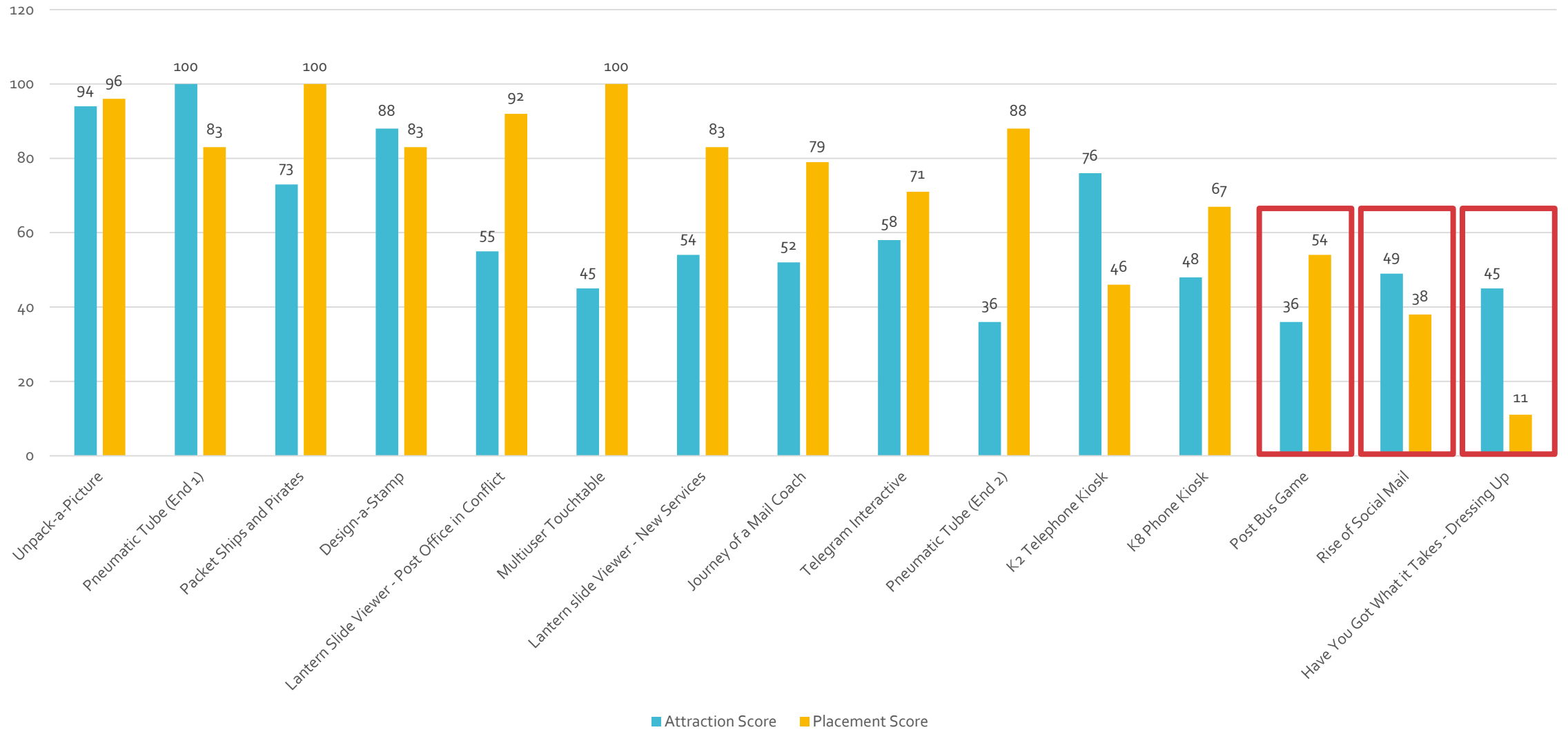
MR Heat & Trace Map



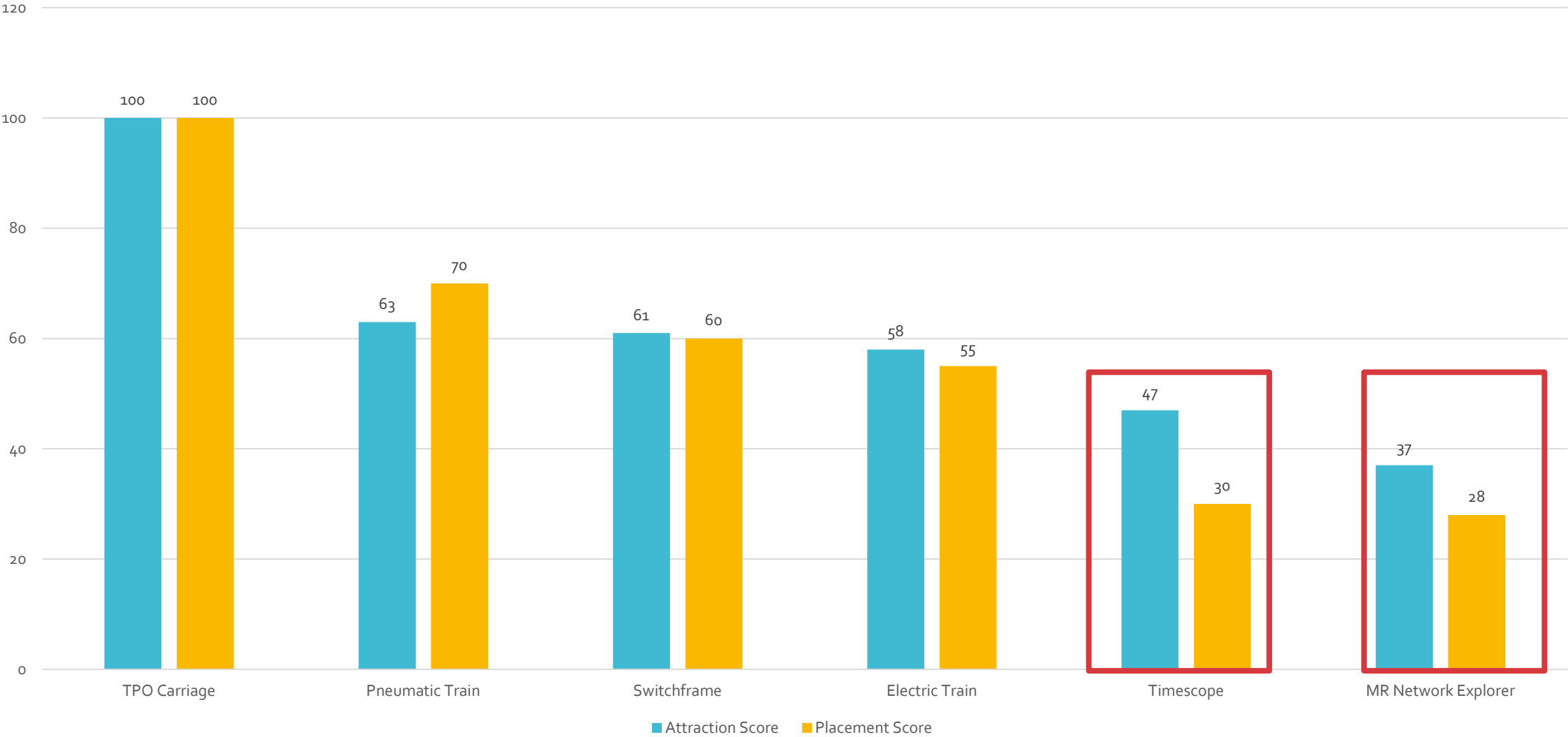
Issue 2: MR Timescope



TPM Attraction & Placement Score



MR Attraction & Placement Score



Intuitiveness & Usability



- Interactives should be easy to understand and use
- Many interactives use step-stools to make them accessible to children
- Traveling Post Office has no instructions, but the idea is easy to get
- Timescope also has no instructions, but many visitors make assumptions

Usability - Switchframe



- The Switchframe interactive is very attractive, but suffers slightly from misuse
- Most visitors approach exhibit from the right hand side, and attempt to pick up the telephone, not noticing the “start” button on the left hand side
- Very little in the way of written instructions, relying almost entirely on voiceover

Usability – Pneumatic Tube



- The Pneumatic Tube interactive also suffers from misuse, exacerbated by its popularity
- Some visitors do not use the canisters, sending up letters that can jam by themselves, or send too many canisters at once, overtaxing the air pump
- Coupled with frequent use, this can cause problems with the mechanism behind the interactive very quickly

Engagement & Interaction

Dwell Time (DT)

- How long do visitor stay at an exhibit?

Degree of Interaction (DOI)

- How deeply do visitors interact?

Scoring

- Engagement Score
- DOI Score
- DT Score

Dwell Time



Packet Ships and Pirates
Lantern Slide Viewer
Unpack-a-Picture
Timescope

Long Dwell Time
> 4 minutes

Occupied

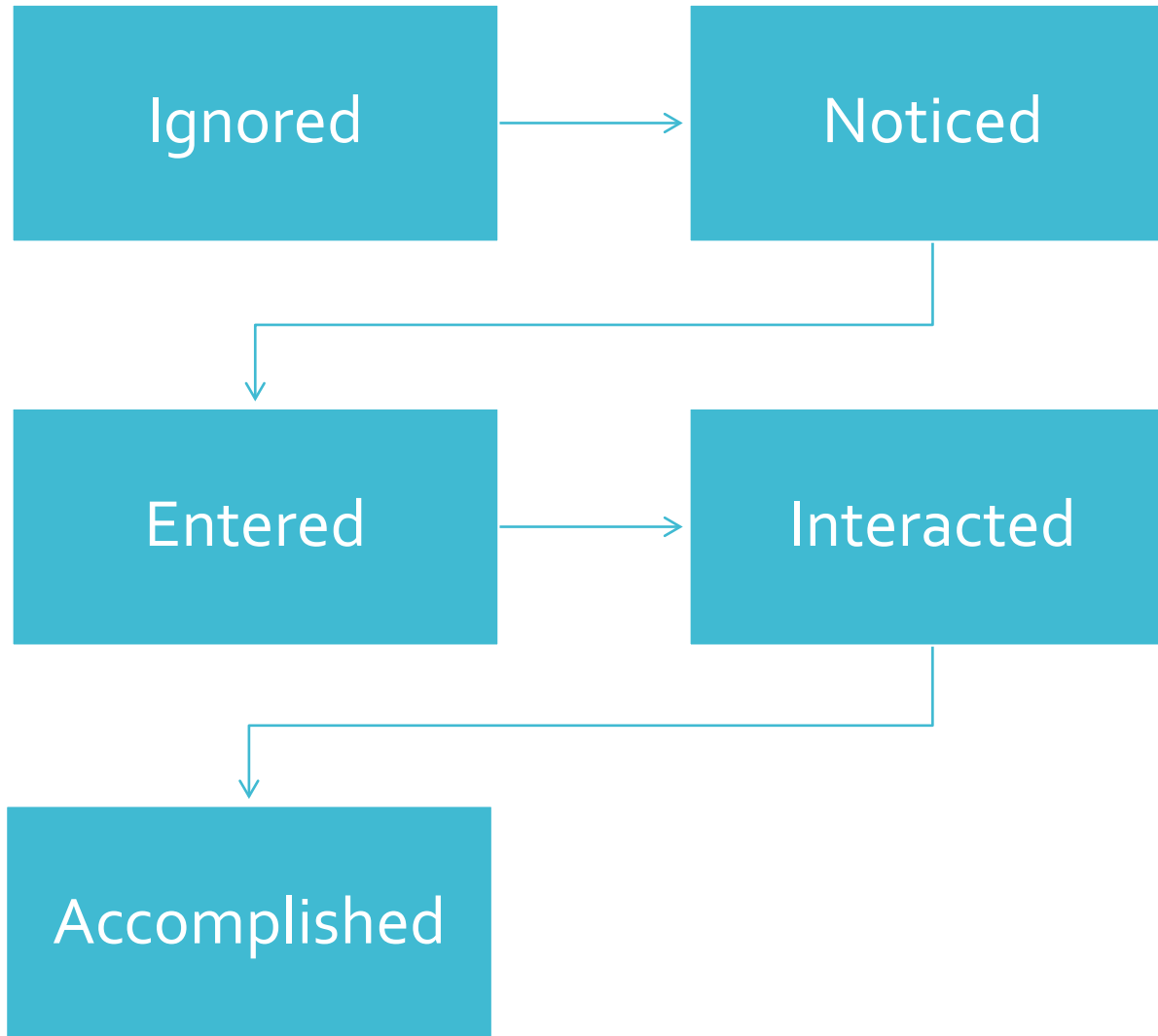
Short Dwell Time
< 1 minute

Pneumatic Tube
Design-a-Stamp
Journey of a Mail Coach



Forgettable

Degree of interaction



Coding:

Ignored = 0

Noticed = 1

Entered = 2

Interacted = 3

Accomplished = 5

TPM Average Degree of Interaction

Degree of Interaction

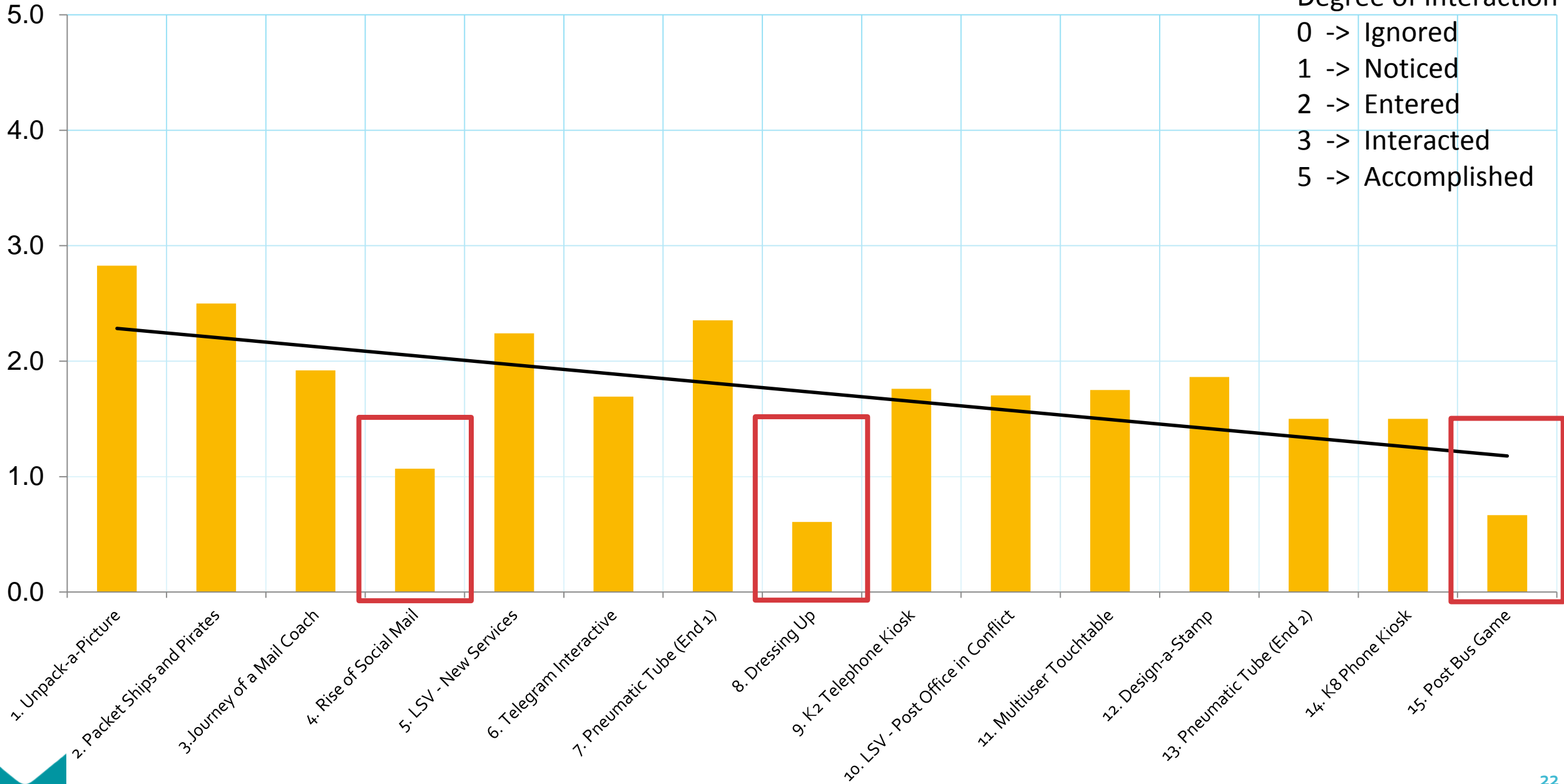
0 -> Ignored

1 -> Noticed

2 -> Entered

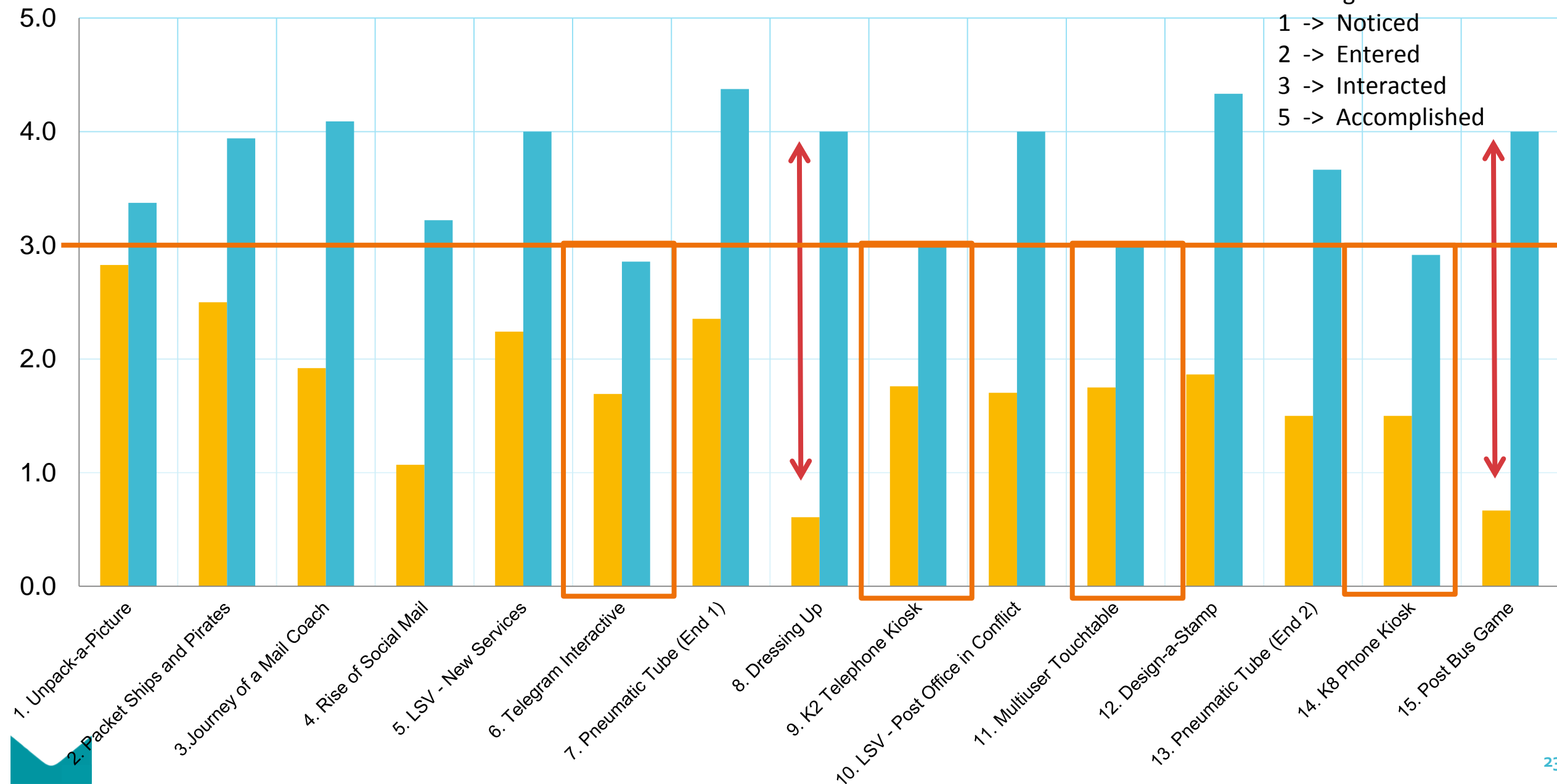
3 -> Interacted

5 -> Accomplished

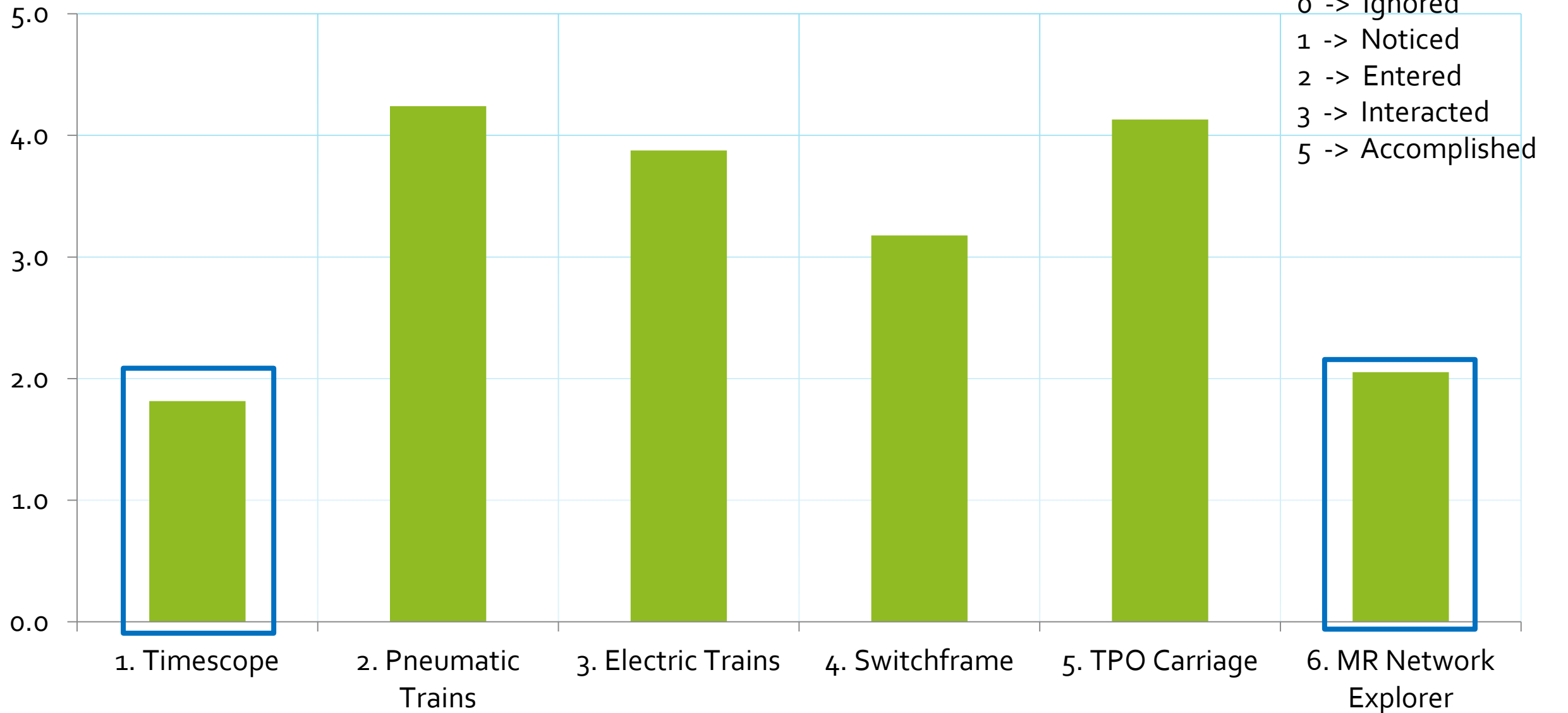


TPM Degree of Interaction Comparison

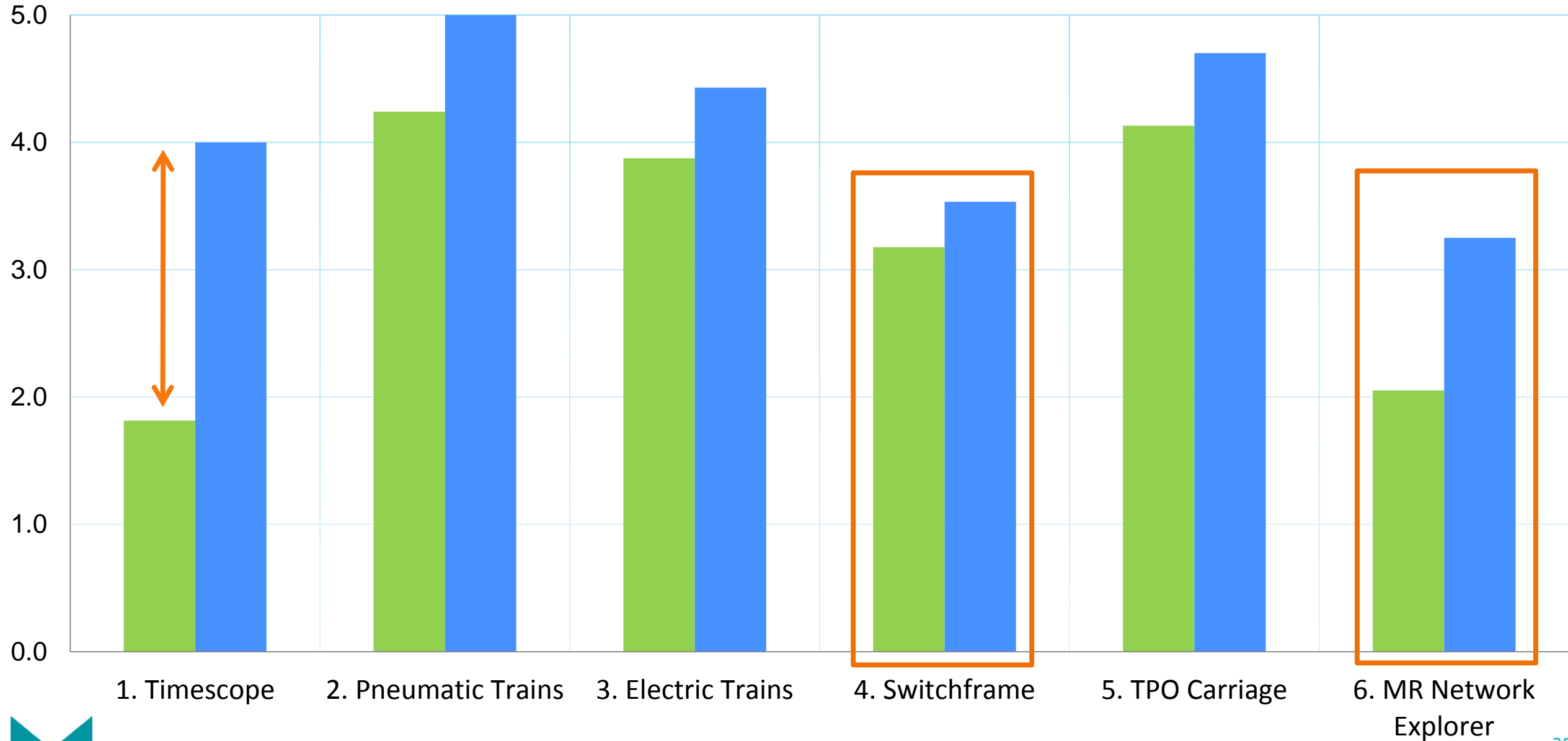
Degree of Interaction
0 -> Ignored
1 -> Noticed
2 -> Entered
3 -> Interacted
5 -> Accomplished



MR Average degree of interaction



MR Average Degree of Interaction Comparison



Broken



- Pneumatic tube at TPM breaks most

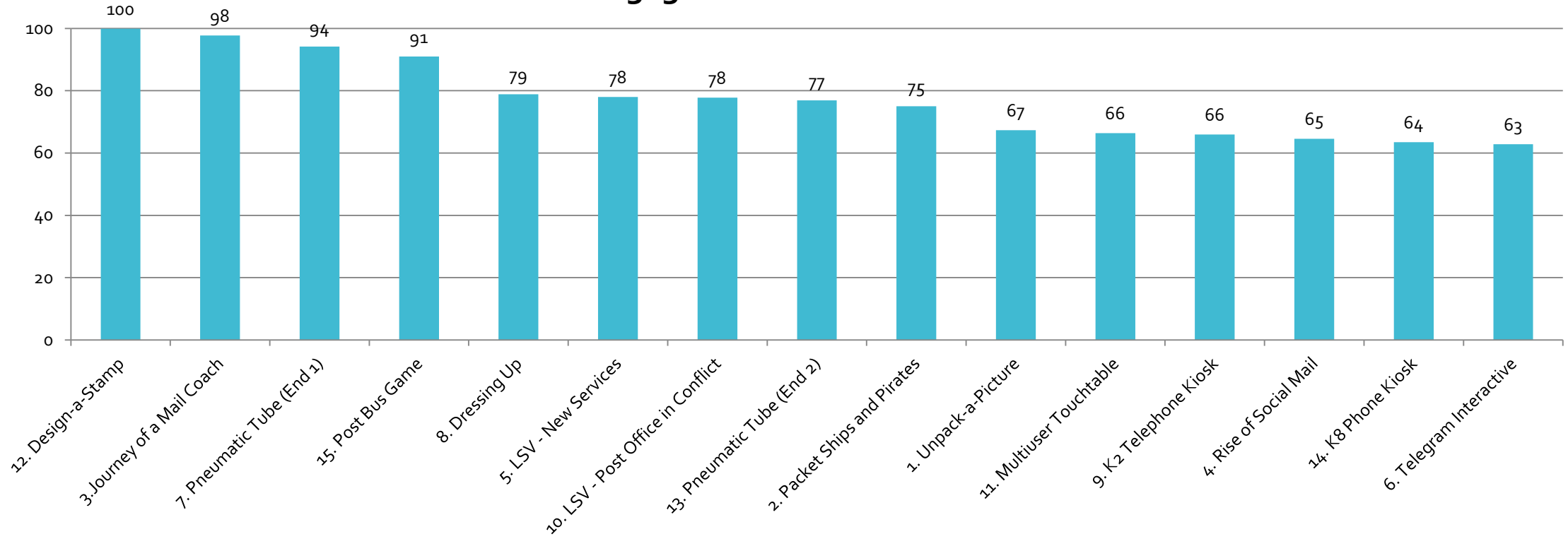


- In a sample size of 30, the pneumatic tube was broken 15 times

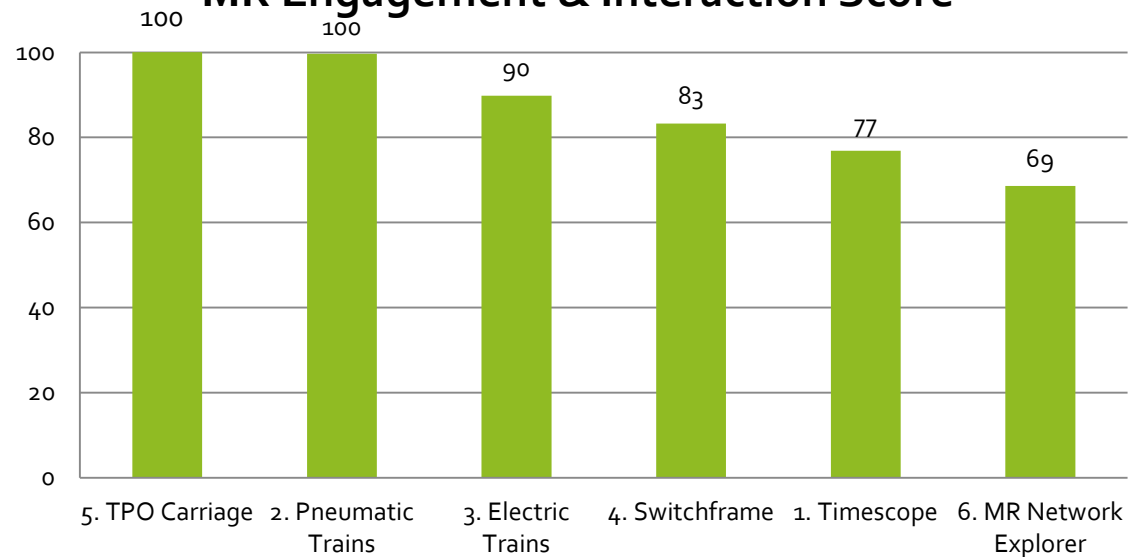


- Albeit pneumatic tube is one of the most popular interactives

TPM Engagement & Interaction Score



MR Engagement & Interaction Score



Design-a-Stamp
TPO Carriage
Pneumatic Trains

100

Recollection & Learning

Collected during visitor study stages

Objective 3:
Assess
Visitor
Experience

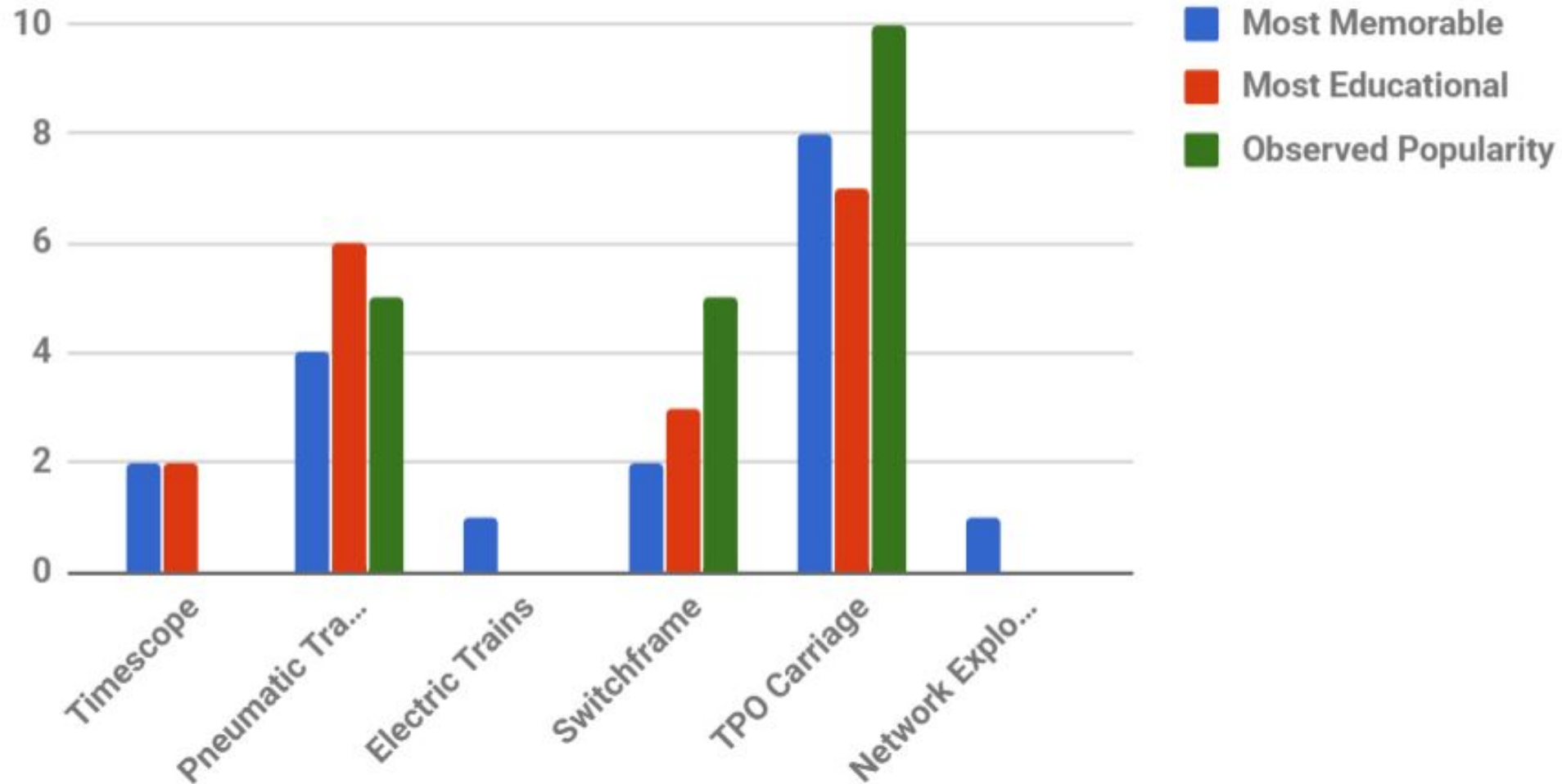
• **Exit Survey**

Objective 4:
Conduct In-
depth
Evaluation

• **Visitor
Interview**

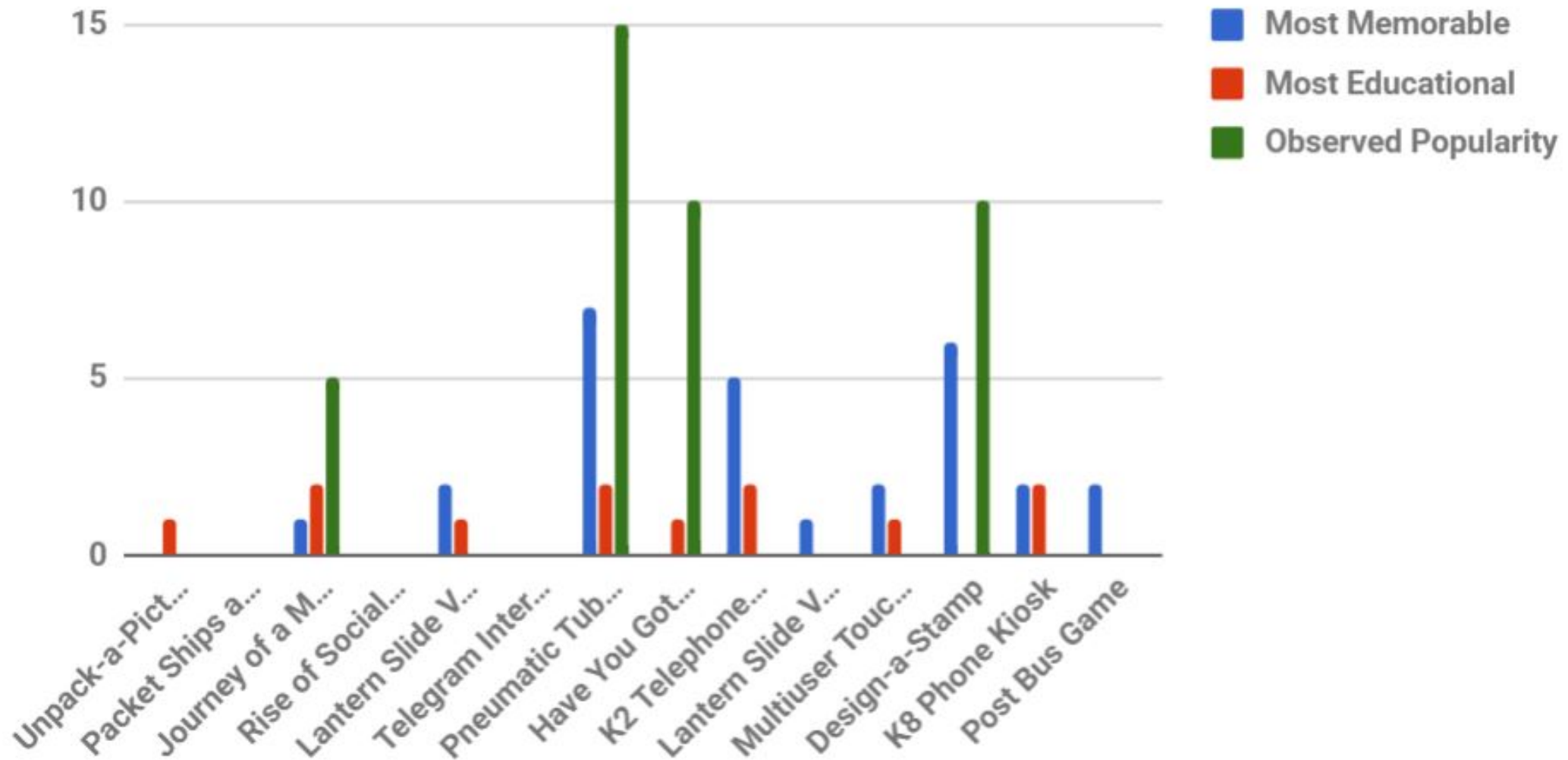
Compared Visitor Feelings, Mail Rail

N=30



Compared Visitor Feelings, Postal Museum

N=31



What Visitors Learned from In-depth Exhibits

N=60

Other

14.0%

Improvements

5.3%

Hard Work

8.8%

Nothing

12.3%

Connection

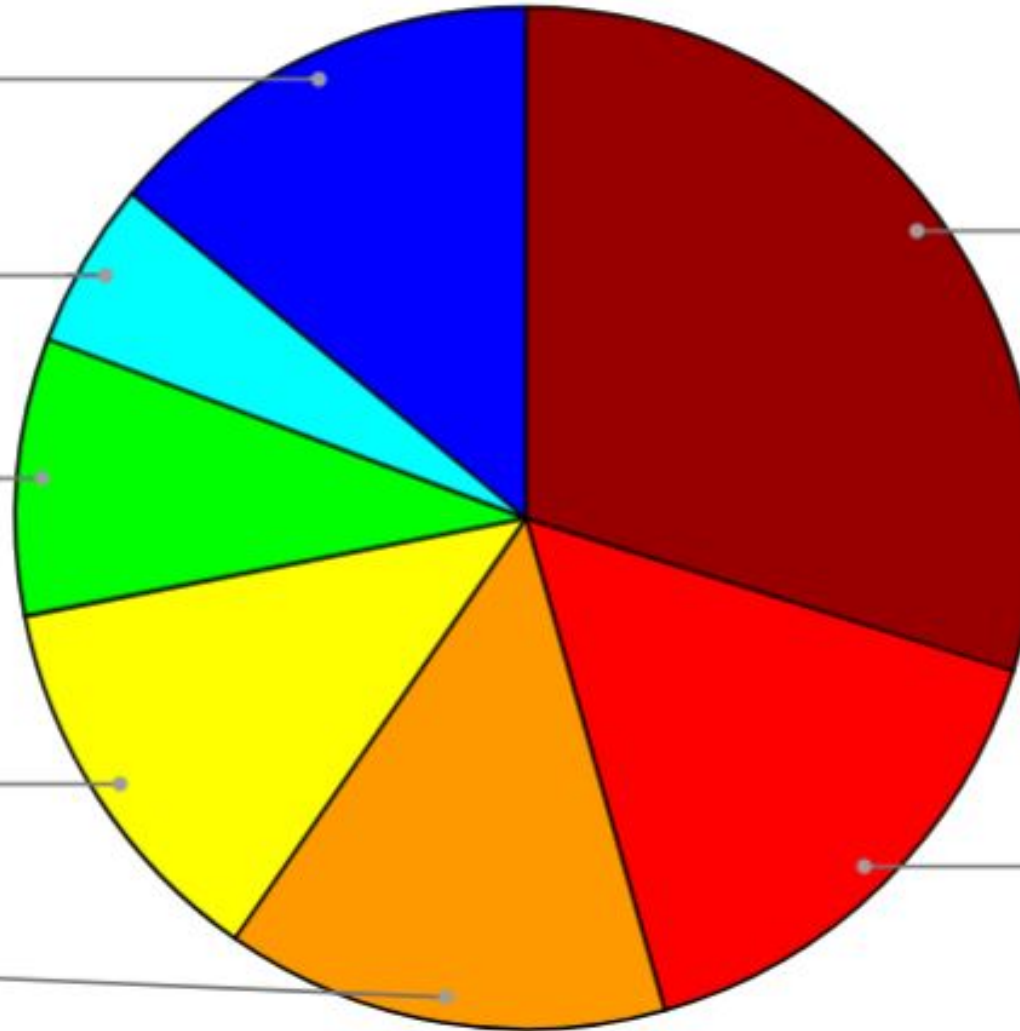
14.0%

How it was used

29.8%

General Fact

15.8%



Deliverables

Data Collected

Survey Protocol

Report Cards

SWITCHFRAME

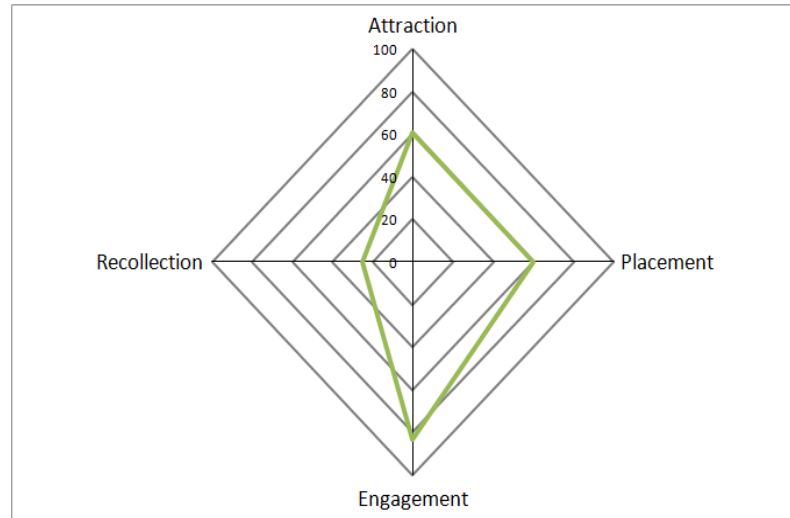


Good at:

- ✓ Fair attractiveness
 - ✓ The design reflects the real Switchframe which is on a poster to the right. Therefore it attracts visitors visually
- ✓ Fair Engagement
 - ✓ Most visitor would choose to complete the tasks
- ✓ Fair Placement
 - ✓ Since the middle four exhibits at MR (all but Timescope and MR Network Explorer) are placed linearly, they all receive a fairly good traffic flow.

Improvement Needed :

- Long dwell time
 - Visitors must spend a long time to complete the interactive



Conclusion and Recommendation

This exhibit mainly suffers from the difficulty in getting started (initial understanding). Visitors who first approach this exhibit often try to use the telephone on the right-hand side first, without noticing the “start” button on the left-hand side. Once visitors begin using the interactive and understand how to use the levers, the length of time required to fully complete all three stages of the interactive prevents other visitors from being able to use it.

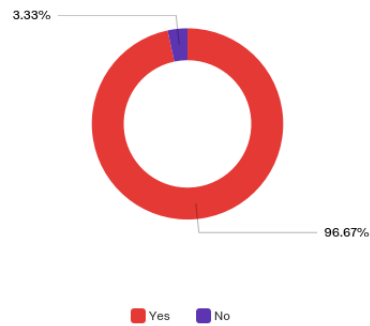
For immediate changes, we recommend making this interactive more appealing while it is in use, to keep visitors from leaving partway through. One suggestion is to add some sound effect to keep visitors interested while the “trains” are moving.

For a long-term fix, we recommend switching the locations of the telephone and the “start” button, as most visitors approach this interactive from the right.

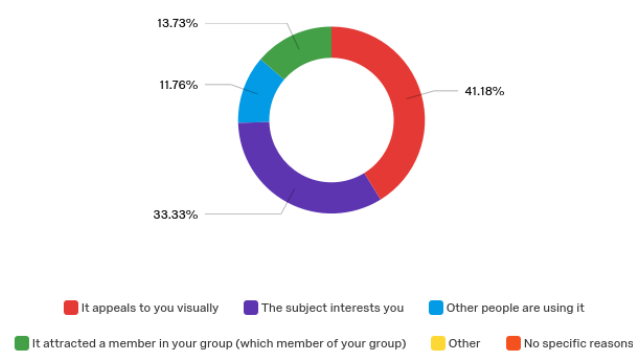
IN-DEPTH – SWITCHFRAME

General

Read Instruction

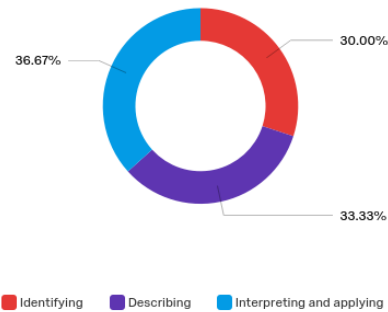


What caught your eye about this interactive?



Learning Outcomes

Level of Understanding

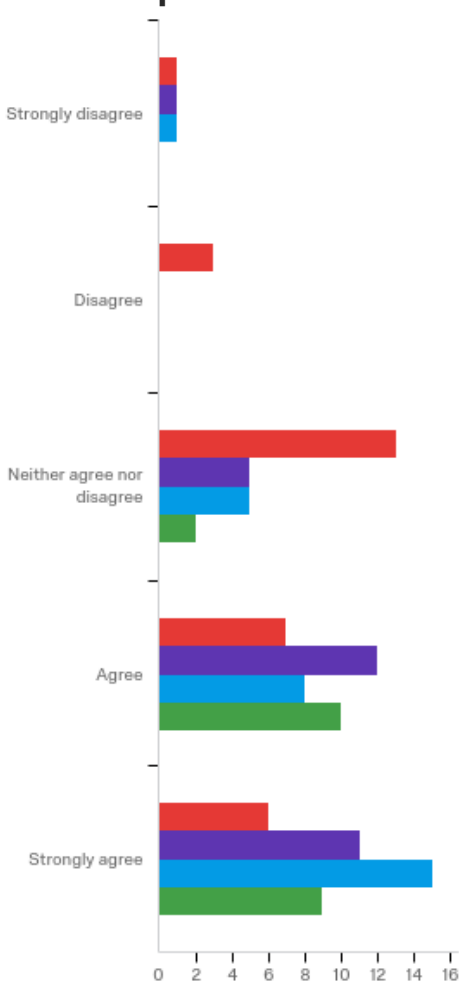


What did visitor tell about the subject matter?



Visitor Experience

What did you enjoy the most about this exhibit?



- You find this exhibit easy to use
- You understand the purpose of the exhibit
- You learned something new from the exhibit
- You and your group can easily cluster around the exhibit

N = 30

Acknowledgement

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Martin Pugh

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Katherine Biggs

National Army Museum

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