



Incorporating Continuous User Feedback to Achieve Product Longevity in Chaotic Environments

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What is a chaotic environment?



- Fast paced
- Rapidly changing
- Uncontrollable external factors



What is a product and who is a user?



- Products
 - Hardware
 - Software
- Users
 - Single human
 - Teams or companies
 - Autonomous entities



History of Feedback (not a rock band)

Traditional user feedback



- Purposes
 - Bug reporting
 - Business development
 - Mollify users
 - Future strategy
 - Measure user satisfaction
- Methods
 - Surveys (polling)
 - Social media
 - Customer support
 - Live chat
 - Customer success

Traditional user feedback



- Problems
 - Slow
 - Too late
 - Focus on negative issues
 - Not enough data
 - Qualitative
 - Reactive – bug fixes

New reasons for getting user feedback



- Market fit
 - Proactive releases make users feel good
 - Personalization
 - Users no longer expect products and systems to be static
 - Stay ahead of competition and disruptors
- Environment fit
 - Natural experiments
 - Controlled experiments
 - New scenarios and usages
 - Changing environment
 - New things appearing
 - Old things disappearing

No excuses for not getting user feedback



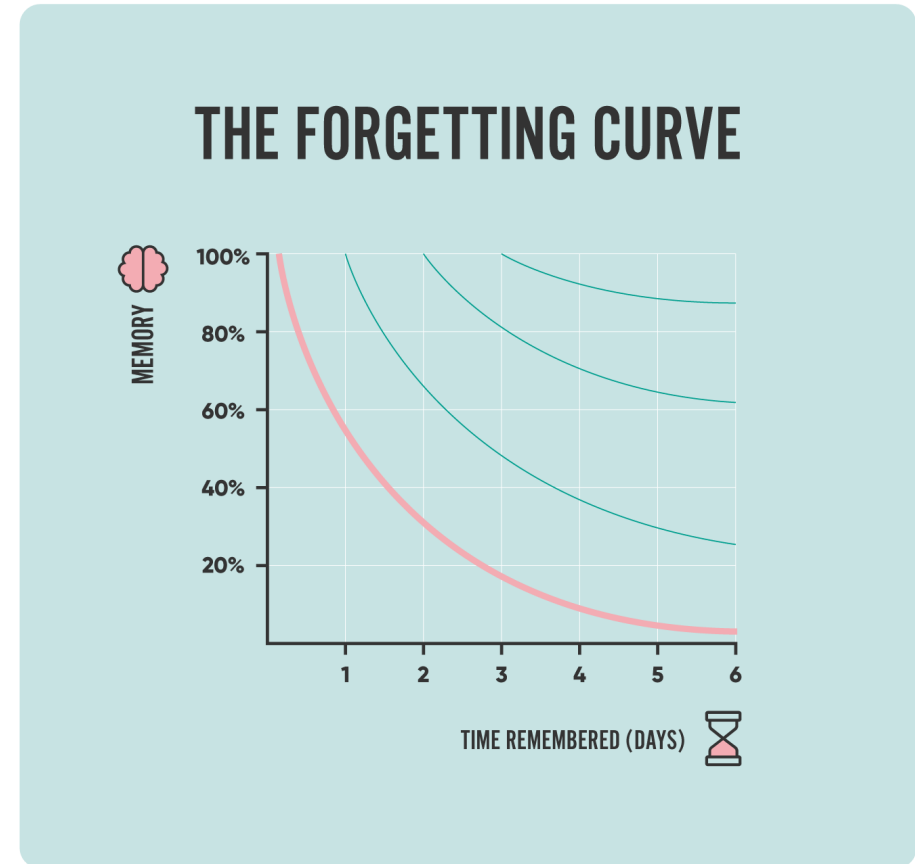
- Data harvesting
 - Storage is cheap
 - Sensors are cheap
 - Processing is cheap
 - Users are NOT cheap
 - Domain specific data is invaluable
- Data collection
 - Constant feedback is possible
 - Products NEED some connectivity for updates, etc.

Designing for Feedback (not a section on guitar amps)

Design – When?



- 😁 Immediately!
 - Build into presentation
- 😊 Soon
 - Within a usage session
- 😐 Before too long
 - Before a user forgets everything



Design – How?



- With **interaction**

- Ease of use
- Not distracting
- Optional
- Not good:



- Simple & quick:



- Logging off or shutting down



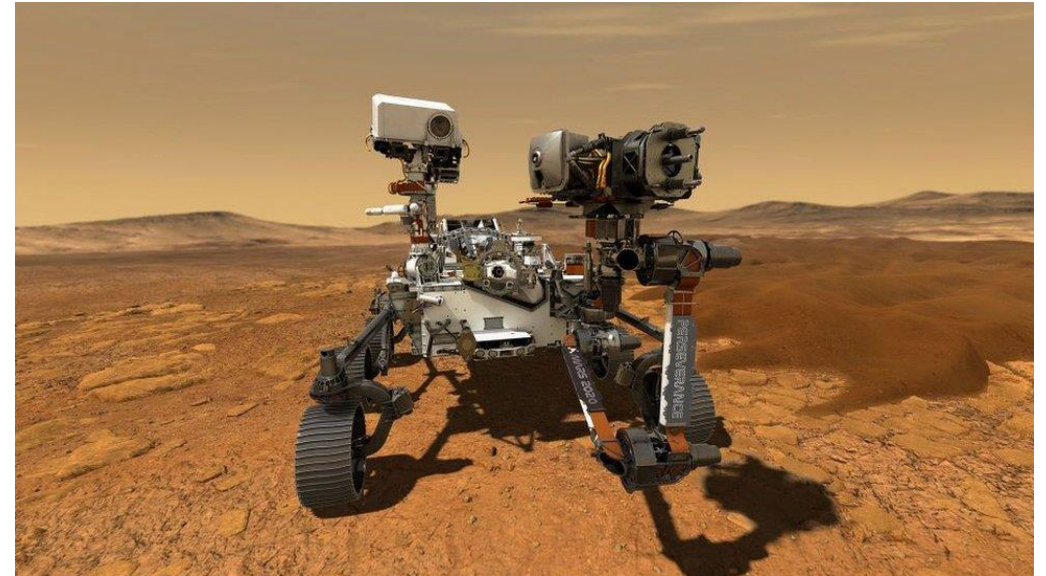
- **Passive** data collection
 - Did they stay on the results screen for a while or bounce?
 - Did the user upload the results they got back to HQ?
 - Are they redoing the same task?
 - Did they save the results to their favorites?
 - Did they mash the button or yell at their device?



Design – How?



- Non-human
 - Did the navigation system make a sudden correction or cause human interaction?



- Did a plotted route result in a stuck robot?

Design – Why?



- Why would a person do it?
 - How rewarded?
 - Ideas like recognition - your input was used in the latest release and performance fixes for efficiency
 - Frustration
 - Happiness
- Why would a machine or corporation do it?
 - Because their humans told them to
 - Maximize ROI on fixed costs
 - Extend useful life
 - No new training

Bringing it Back In

When to integrate



- The other side of the collection coin is that you must actually do something with the feedback!
- Make it part of the data pipeline
- Automate as much cleaning and validation as possible
- Make it part of the update workflow
 - Review with humans as needed

How to integrate



- Use locally
 - Example - Auto adjust overlap tolerance on panoramic camera based on user accepting/rejecting their own photos
- At the edge
 - Upload back to servers in batches or at scheduled intervals
- Always connected
 - Can be real-time

Case Studies

Examples from Observa (my company)



- Viewing a report allows for corrective input at any time
 - No need to “correct” the system, just report mistakes
 - On any chart of a report
 - By any viewer of the report
 - Remove from reporting immediately

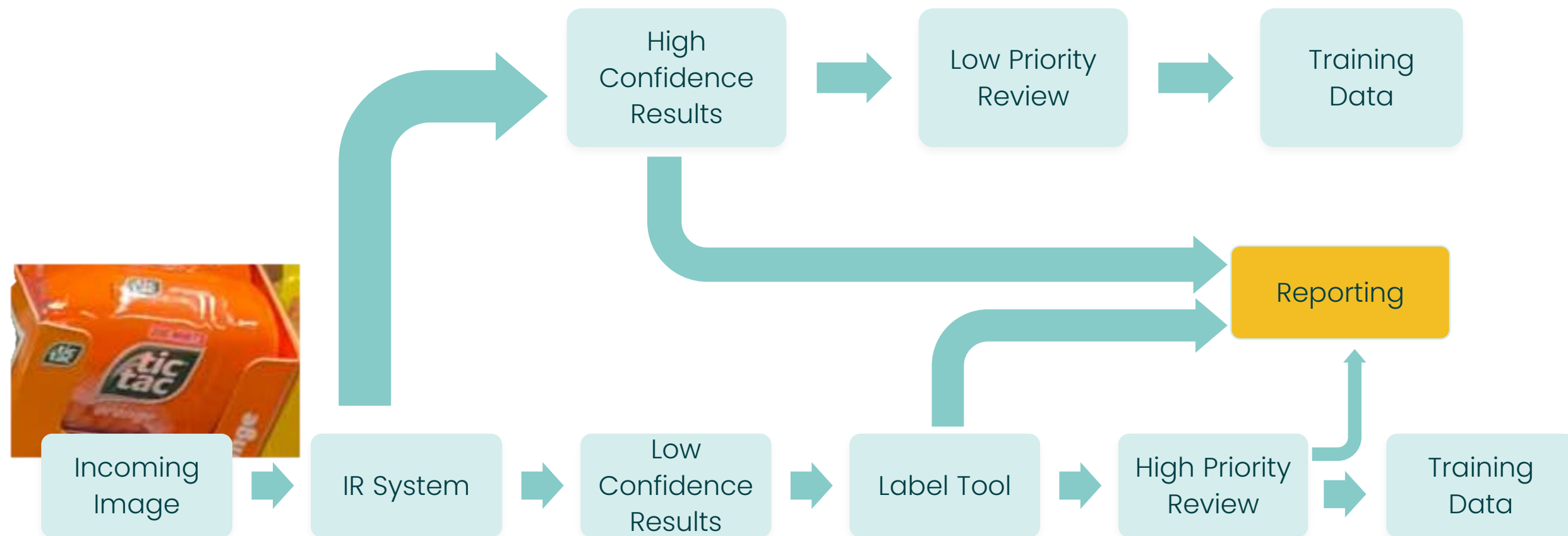


Right click on any element to bring up a “reject” option

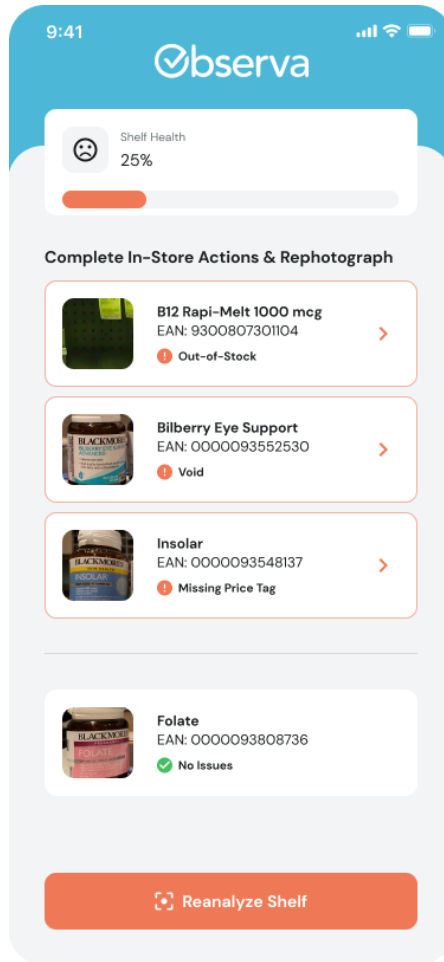
Examples from Observa (my company)



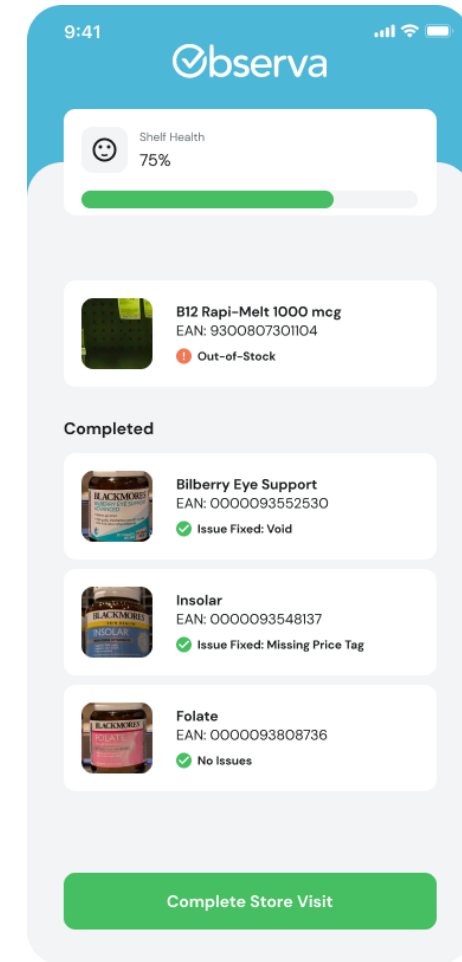
- Low confidence results “passively” come back for human review in the pipeline



Examples from Observa (my company)



- Observa app when field service users are in front of the shelf
 - Passive if they agree or need to reanalyze



In Conclusion

In Conclusion



- User feedback keeps your product relevant
- User feedback can be collected cheaply and unobtrusively if you design for it
- Your user feedback is unique and unobtainable by competitors
- Users are motivated to help you:
 - Intrinsically
 - Financially
 - Emotionally

Natural Experiments

<https://www.nobelprize.org/uploads/2021/10/advanced-economicsciencesprize2021.pdf>

The Virtuous Cycle of AI Products

<https://www.eriktrautman.com/posts/the-virtuous-cycle-of-ai-products>

Evolution of intelligent data pipelines

<https://www.technologyreview.com/2021/12/06/1040716/evolution-of-intelligent-data-pipelines/>