

Visitor Management System (VMS) HCD Research / Interview Findings

Discovery on old VMS implementation (2017 version)

QUESTIONS?

Cheryl Platz, Principal UX Designer

Sarah Powers, Senior Project Manager

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What are we doing?

Human Centered Design

HCD usually begins with a “Discovery” phase where we learn as much as we can about an existing problem, system, or product.

But aren't we replacing VMS?

Yes, but there's still a lot we can learn about how our users work today and how the existing solution has helped or hindered them.

Over the past 2 weeks, Cheryl conducted and analyzed a quick series of interviews with existing VMS users for this purpose.

What were the goals of these interviews?

- Understand our users' mental model: how they think about these concepts
- Define what goals bring our customers to the system
- Explore the context of use: what constraints are our customers dealing with
- Learn what mistakes we should avoid
- Learn what's working that we should endeavor to keep

And these were our non-goals...

- Asking customers to evaluate a proposed solution
- Conducting usability tests on the existing system
- Brainstorming new solutions

5 HCD interviews conducted from 2/27 – 3/11/2019

Name	Job Title	Location	Participant ID	Date
	Senior Program Assistant	Seattle	VMS-001	2/27
	Assistant Facility Manager	Seattle	VMS-002	3/4
	Lead Receptionist	Seattle	VMS-003	3/5
	Security Officer	Seattle	VMS-004	3/5
	Receptionist	Beijing	VMS-005	3/11

- Transcripts of these interviews are available on Teams.
- Videos from VMS-001 are available on Teams.
- Audio recordings are available upon request.

User roles for today's VMS

What's a user role?

These are not quite the same as personas – think of them as “hats” a person wears when they're completing specific tasks.

Why are these useful?

One user might have multiple user roles, based on their job or the situation they find themselves in. Thinking of roles in this way lets us adapt to users who are wearing many “hats”, like the China receptionists.

User roles: Visitor **registration** scenarios

Visit requestor

- Employees only
- *Most* users are infrequent
- Small visits: interviews, 1:1, etc
- Not *necessarily* the host/sponsor
- May be front desk staff for same-day situations

Visitor host

- Responsible for meeting host-required guests
- Notified when/where guest arrives
- May change day-of in emergency
- Not necessarily the requestor
- May be a subsidiary employee (purple/grey badge)

Group requestor

- Often a power user scheduling big groups (10-20+)
- Mixed groups: escort and non-escort, multi-contract
- Uses batch entry in Excel in multiple languages
- May not be on campus when guests arrive (off-hours)

User roles: Check-in desk scenarios

Front desk / Security

- Prints badge for host-required guests
- Activates hard badge for no-host guests
- Frequently checks in large, related groups
- May need to add to or modify an existing group
- Can be at a front desk or loading dock
- Troubleshoots unscheduled guest arrivals

Conference Center desk

- Check large lists of people against a persons of interest database
- Learn when a large group is being registered for front desk check-in
- Take over management of large groups that would overwhelm the front desk
- Checks contract expiration date for travel scheduling purposes

We do not have interview insights from Conference Center users – feedback came in during our requirements review.

Defining “Jobs to be Done”

The official definition

“A Job to be Done is not a product, service, or a specific solution; it's the higher purpose for which customers buy products, services, and solutions.”

EXAMPLE: A customer doesn't browse a list for fun. They're browsing FOR something. The job to be done might be “Call a user from my contact list.”

How we'll use them

Jobs to be Done are the archetypal customer needs in the “real world”, *independent of implementation detail* as much as possible.

We've assembled the Jobs to Be Done for each user role based on the content in our interviews.

Visit Authors

Jobs to be Done & Pain Points

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Visit Requestor: Jobs to be Done

Plan an **individual's** future visit to the foundation

- Learn whether my guest needs to be registered, and how long they may have access
- Register a **foundation outsider**
 - Grantee, interviewee, family member
- **Inform Front Desk** about scheduled visit
- **Learn** if my guest has conflicting or adjacent appointments that same day
- Arrange for an individual to visit **repeatedly over multiple months**

Provide a **foundation partner** with unsupervised access

- Register a visitor as a **non-escort visitor** when needed
 - Requires contract number
 - Repeat these visitors without contract re-entry
 - Specify custom access (discovery center, etc)
- Specify the **times of validity** for a no-host badge
 - After hours scenario
- **Record a destination** for a no-host visitor
 - Office location for meetings, etc.

Visit Requestor: Jobs to be Done

Arrange access for a **last-minute visitor** after arrival

- **Find BMGF contact** for unscheduled visitor
- Register a **foundation outsider**
 - Grantee, interviewee, family member
 - May be performed by front desk *or* host
- Register a **foundation contractor**
 - Cannot be performed by front desk

Visit Authors: What's working?

- Escort-required visitors already in the system save authors time
- When notifications work correctly, they're helpful
- Emails to guests usually help dispel confusion
- Connection is reliable on Seattle campus
- Initial tasks are clear
- Ability to repeat an event (though may be seldom used)

Key Pain Points for Visit Authors

Issue	Detail	Impact	Interview
Mental model mismatch	VMS lists visits by title, but the most important information is visitor name.	Extra clicks when checking status	VMS-001
Repeated data entry	The system is optimized for escort-required one-time visitors.	Authors must search for users and re-enter contract numbers every time	VMS-001
Lack of clear system status	New visit form could easily get into a state where submission was disabled, with no explanation	Frustration. Minutes lost each time entering a visit, troubleshooting the issues.	VMS-001
Exact name match required	Name searches seem don't support partial name entry or nicknames	Lost time for visit author and potentially guest + front desk later.	VMS-001
Postponing meetings	A relatively common situation is a postponed meeting, but there is no way to easily reschedule a meeting.	This leads to lost troubleshooting time for visitors, authors, and front desk staff.	VMS-001, VMS-002
Lack of visit coordination	No easy way to check whether a visitor is already registered for a specific day or time	Duplicate entries, longer checkin process at front desk, guest confusion	VMS-001
Backend sync issues	VMS sometimes insists a person is in the system but they don't show up in search	IT ticket is required; time zones are an issue; sometimes leads to an extra escort required	VMS-002

Visit Hosts

Jobs to be Done & Pain Points

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Visit Hosts: Jobs to be Done

Receive one or more visitors at the foundation

- **Learn** when my visitors arrive
 - When all in a group have arrived
 - Even if I've forgotten to schedule them.
- **Meet** host-required guests *promptly*, at the *correct location*
- **Know** when a no-host visitor has been admitted
- **Avoid** unnecessary trips to the front desk

Cover for a coworker who is unable to receive their guests

- Review another host's schedule
- Receive notifications for another host's guests
- Coverage is usually between peers on a team

Supervise a team of host-required external visitors

- **Gain admittance** as a no-host visitor when requestor is not present

Key Pain Points for Visit Hosts

Issue	Detail	Impact	Interview
Wasted front desk trips	There is a single notification email that goes out to EVERYONE, instructing the escort to report to the front desk.	<ul style="list-style-type: none"> When a visitor checks into the loading dock, this leads to wasted troubleshooting time at the front desk. When a no-escort visitor checks in, this sometimes leads to crossed signals where the host shows up but the visitor has gone to meet them. 	VMS-002
Escort delegation	There is not an easy way to reassign an escort or subscribe to notifications for a visitor	Substitute escorts due to illness/emergency may not know when the guest they are responsible for has arrived	VMS-001, VMS-002
Missed notifications	Due to issues with the VMS UI at the front desk, notifications are sometimes not issued if the “OK” button is not visible during the checkin process.	Group escorts may wait too long to come to the front, waiting for the whole group to check in. Single-visitor escorts may never show up.	VMS-003

Group Requestor

Jobs to be Done & Pain Points

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Group Requestor: Jobs to be Done

- Schedule a visit from a **group of visitors**
 - Schedule a single visit encompassing multiple contracts
- Schedule a visit from a **mixed group** of visitors
 - Quickly **see a group's non-escort visitors**
- Efficiently enter a large group of visitors (20+)
- **Reschedule** a planned group visit
 - Adapt to unavoidable delays from contractors or due to events
- **Repeat** a previous group visit
 - Save time and minimize risk of errors

Group Sponsors: What's working?

- The new (2017) UI for group additions is considered an improvement
- Security's use case is well handled by a single contract entry per group
- Repeating a visit is supported by the current system

Key Pain Points for Group Sponsors

Issue	Detail	Impact	Interview
No mixed-escort support	VMS does not support groups with both escort and non-escort visitors.	Multiple events must be created for a single “real” event, increasing complexity for both sponsor and front desk	VMS-002
Single contract per event	VMS does not support more than one contract number per event	Multiple events must be created for a single “real” event, increasing complexity for both sponsor and front desk	VMS-001
Background check not supported	Some events require a visitor go through a background check to become an escort. VMS has no awareness of this process.	There is no check to ensure a background check has cleared, meaning a key security detail is on the “honor system”. Also leads to extra cognitive load for group sponsors tracking this.	VMS-002
Bulk import tool is English only	The bulk import process does not support double-byte languages like Chinese.	Group sponsors or front desk staff must manually translate all visitor names and information from Chinese to roman characters.	VMS-005
Bulk import tool does not support blank fields	The bulk import process does not support entries without a valid email address.	Group sponsors must create fake email addresses for visitors who have not provided one in advance	VMS-005

Check-in Desk & Security

Jobs to be Done & Pain Points

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Check-in Desk & Security: Jobs to be Done

- **Quickly print** an host-required badge
- View **all of a visitor's events for the day** in a single view
 - See whether any of those visits include no-host privileges
- **Check in** multiple visitors in **from the same group** in rapid succession
- **Notify visitor hosts** where and when their guest is waiting
- **Register** an unscheduled **host-required** visitor
 - Quickly establish whether the **unscheduled visitor** should be admitted (past host)
- **Validate parking** for host-required visitors on Foundation business

Check-in Desk & Security : What's working?

- The check-in UI for groups is perceived as a big timesaver, and the Seattle reception staff very much wants to maintain that ability
- Front desk staff says same-day checkins are easy to do

Key Pain Points for Check-in Desk & Security

Issue	Detail	Impact	Interview
Information architecture mismatch	Front desk UI emphasizes visit name, but buries the visitor type (escort or no-escort)	Extra clicks for every single check-in	VMS-003
Lack of visit coordination	Front desk may or may not see multiple meetings scheduled on the same day for a single visitor	Wrong badge type issued; multiple trips to front desk; misleading notifications	VMS-003
Printing unreliable	Printing badges is non-deterministic: at every workstation, the reliability differs (crashes, 4-5 button presses, etc)	Significant lost time for every check-in, sometimes requiring browser restart or a machine switch	VMS-003, VMS-004, VMS-005
Troubleshooting unscheduled guests	There is no optimized workflow for troubleshooting the arrival of an unscheduled guest, often caused by a postponed meeting	Significant lost time modifying default search parameters to try and find a recent host to contact	VMS-003, VMS-004
Confused escorts	Standard notification email does not apply to all situations with no way to customize	Confused escorts show up and pepper Front Desk with questions they can't answer	VMS-004
Hardware resets	Front Desk machines are frequently reset or deal with connection issues	Lost settings, repeat logins, delays	VMS-004, VMS-005

Conference Center Reception

Jobs to be Done only – no pain points recorded

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Conference Center Reception: Jobs to be Done

- Verify that **no persons of interest** are among a large set
 - Typically checking lists of conference attendees with no meeting scheduled
- **Learn when a large group** is being registered for front desk check-in
- **Take over** management of large groups from front desk
 - Aid front desk and prevent bottlenecks
- **Schedule visitor travel** for conferences
 - Requires access to valid contract # and expiration date for a visitor

So what's next?

- Use our Jobs to be Done to evaluate any proposed solutions
- Prioritize the Jobs to be Done
- If any JTBD are below the cut line, establish the impact that will have on our users
- In parallel, investigate backend improvements that may have UX impact (see Teams, Appendix)
- Review VMS-001 videos to learn from specific UI mistakes we should avoid repeating

Appendix: Technical integration issues

Issues encountered in interviews that may be larger than just information architecture or UI design

Technical integration feedback: Visit Author, Group Author, Visitor Escort

- The current system sometimes says a guest is registered, but no entry shows in VMS. (VMS-002)
 - This requires an IT ticket to fix, and due to time zone issues is often a time-consuming problem.
 - In some cases, this has led to lost money from rescheduled maintenance, etc.
- The ability to flag a no-escort user as "background check completed" is on the honor system in VMS. (VMS-002)
 - This is perceived as a security risk; there is no check to verify whether a background check is logged
- VMS will not load off-site for any China employees, despite a desire for it to do so (and despite the fact that Foundation email is accessible offsite. (VMS-005)
- Notification emails do not accurately reflect visitor status. Hosts sometimes get notified to come to the Front Desk even though their visitor is at the Loading Dock, or when their no-escort visitor has already gone inside. (VMS-002)

Technical integration feedback: Security/Front Desk

- **Visitor Desk is unresponsive/unstable for the China office. (VMS-005)**
 - The China reception team reports latency issues that slow down interactions considerably.
 - In particular, attempts to print often fail with an "unspecified error" that forces her to start over in a new browser window.
- **The no-escort badge handoff (with Lenel?) is unreliable. (VMS-004)**
 - From Reception: "Yeah, I don't know how many times I've put in a green badge, and it's supposed to, once you've checked in in, it's supposed to transfer everything and activate the badge. The name and the activation of the badge is supposed to be there, but it doesn't always work that way. And I don't know why."
- **Most receptionists rely on manual badge number entry to activate badges right now. Not clear if there's an issue with the scanning hardware or the integration. (VMS-003)**

Appendix: Reference Materials

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Interview Question Pool

A subset of questions is chosen during the interview as the customer's context of use is uncovered.
Not all questions apply to all users.

Data entry

- Under what circumstances do you usually need to work with visitors? What's your goal?
- Can you describe your process when you need to add a visitor for the first time?
- Where are you typically doing this task? Are you juggling other tasks simultaneously?
- Can you describe your process when you need to register a visit from a repeat visitor?
- Do you have any shortcuts or workarounds you've developed to make things faster?

Day of experience

- What do you tell your visitors when preparing them to visit the Foundation for the first time?
- Can you describe what currently happens when one of your visitors arrives?
- Can you think of any situations where your visitors had trouble checking in? What happened?
- Have your visitors ever complained about their arrival experience? What happened?

Interview Question Pool

A subset of questions is chosen during the interview as the customer's context of use is uncovered.
Not all questions apply to all users.

Extreme use

- Can you tell me about the most complex visitor experience you've had to deal with?
- When you think about entering a lot of visitors at once, what comes to mind? Any frustrations or worries?
- What's the worst thing you've ever seen the visitor management system do, or fail to do?
- Can you think of anything missing from the current visitor management system?

General

- How long have you been at the Foundation?
- What devices do you use at the Foundation?
- About how often do you host visitors at the Foundation?
- Can you describe your typical visitors and the purpose of their visits?
- Are there any features in today's VMS that "just work", that you hope never change?
- If you could change one thing about your current tools, what would it be?

Previous “upgrade” context

Several participants reference a previous version of VMS. Context on what changed in late 2017, from this link:

Note that the badge policy document no longer exists, which seems like a big policy gap for our security efforts.

Colleagues,

In support of the foundation’s continuing effort to **evolve the way we work** by optimizing systems and tools to better meet foundation needs, Global Security (GS) is thrilled to announce **an update to our Visitor Management System (VMS), effective 2 December 2017**. This upgrade comes with improved functionality and a brand new user interface that will ease pain points across the foundation.

Key improvements include:

- Less clunky, less clicky!
- Multiple visitor uploads
- Ease of scheduling reoccurring visitors

How do I access VMS? Same way you always do, with the easiest option being to navigate from your Ampersand quick links. And don’t worry, it’s single sign on!

What happened to my upcoming visits? Not to worry! Any visitors registered before 2 December with a visit date scheduled for on or after 2 December have been transferred to the upgraded version.



Front Desk setup with badge print screen open



Second print dialog (from browser)