



### Agenda

#### Lecture

- Proč dělat výzkum?
- Heuristiky a expertíza
- Přehled výzkumných metod
  - interviews

### Workshop

Úkol z minula - představení

Research

- Výzkum od stolu
- Interview
- Persona

### **Communication tools**

### → Gitlab

https://gitlab.fi.muni.cz/qhala/dashboard-PV278

#### → **Slack** (preferred)

fi-muni-rejnoci.slack.com When you log in - say hi to #general

### → Email

khala@redhat.com msviriko@redhat.com lenka.sakalosova@notino.com



### Final project - UX

UX part (50%)

- Define a problem
- Understanding your user (personas, storyboard)
- Sketches and prototypes
- Usability testing feedback captured and incorporated
- Creativity



### Final project - UI

UI part (50%)

- Landing page
- Dashboard
- Chart using some chart library
- Table static
- Table interactive
- Entity detail
- User detail



### **Final project variables**

Meteorological information of czech republic past 40 years

- Temperature average, minimum, maximum
- Sun precipitation, snow, sunshine
- Air wind speed, air pressure, air mois

Choose interesting and relevant date or date range

• Eg: date of birth (how much sunshine was in history at this date), temperature change in your life or someone famous

Data are not 100% clean and up to date



## Úkoly z minula!

- → Challenges témata
- → Cílová skupina/segment
- → POV statement



## Lecture: Discovery research

- What and why
- How to research



## Research

Co to je?





11

## You are not your user







12



Experiments Reduce the Risk of Uncertainty

13

### "Generating ideas is not a problem."

Rita McGrath Professor of Management Columbia Business School "A founding vision for a startup is similar to a scientific hypothesis."

> Rashmi Sinha Founder, Slideshare

"It doesn't matter how beautiful your theory is, it doesn't matter how smart you are. If it doesn't agree with experiment, it's wrong."

> Richard Feynman American theoretical physicist

"Anyone who isn't embarrassed by who they were last year probably isn't learning enough."

> Alain de Botton Philosopher







Experiments Reduce the Risk of Uncertainty

## Druhy otázek v biznisu



## **Product-market fit**

### The Product-Market Fit Pyramid



## **Product-market fit**



# Interní výzkum a příprava



### Interní výzkum

### Co již o problému víme?

#### Cíle a vize

- Čeho chceme dosáhnout?
- Jaké máme omezení?

#### Aktuální stav

- Jak to vypadá teď?

#### Předešlé pokusy

- Máme jiné zdroje dat
- Zkoušeli jsem to změnit?

#### Koho se ptát:

- Management
- Experti
- CC
- Analytici



#### MARKET RISK

#### **Desirability Hypotheses**

Explore first

The Value Proposition Canvas contains market risk in both the Value Map and Customer Profile. Identify the desirability hypotheses you are making in:



#### Customer Profile

We believe that we...

- are addressing jobs that really matter to customers.
- are focused on pains that really matter to customers.
- are focused on gains that really matter to customers.

#### Value Map

We believe...

- our products and services really solve for high-value customer jobs.
- our products and services relieve top customer pains.
- our products and services create important customer gains.

The Business Model Canvas contains market risk in the value proposition, customer segment, channel, and customer relationship components. Identify the desirability hypotheses you are making in:



Customer Segments We believe...

- we are targeting the right customer segments.
- the segments we are targeting actually exist.
- the segments we are targeting are big enough.

#### Value Propositions

We believe...

- we have the right value propositions for the customer segments we are targeting.
- our value proposition is unique enough to replicate.

#### Channels

We believe...

- we have the right channels to reach and acquire our customers.
- we can master the channels to deliver value.

#### **Customer Relationships**

We believe...

- we can build the right relationships with customers.
- it is difficult for customers to switch to a competitor's product.
- we can retain customers.



### Assumptions

Known	Things we are aware of and understand	Things we are aware of but don't understand
Unknown	Things we understand but are not aware of	Things we are neither aware of nor understand

Knowns

Unknowns



## Assumptions mapping

Knowns	Assumptions	Unknowns



## Assumptions mapping 1

KNOWNS

Co víme

- Zdroje info
- Jak moc to víme?

ASSUMPTIONS

Co předpokládáme

Co musí být splněno, aby nápad fungoval? UNKNOWNS

Co nevíme

- Otázky, které máme
- Co bychom
   potřebovali vědět k
   práci



#### **Prioritize Hypotheses**

Step 2

Use the Assumptions Map to prioritize all your hypotheses in terms of importance and existence or absence of evidence that supports different types of hypotheses.

#### x-Axis: Evidence

On the x-axis you place all your hypotheses positioned to show how much evidence you have or don't have to support or refute a specific hypothesis. You place a hypothesis on the left if you are able to produce relevant, observable, and recent evidence to support a hypothesis. You place a hypothesis on the right if you do not have evidence and therefore will need to generate it.

#### y-Axis: Importance

On the y-axis you place all your hypotheses in terms of importance. Position a hypothesis at the top if it is absolutely critical for your business idea to succeed. In other words, if that hypothesis is proven wrong, your business idea will fail and all other hypotheses become irrelevant. You place a hypothesis at the bottom if it is not one of the first things you'd go out and test.

#### **Top Left**

Check the top left quadrant against your evidence and share it with the team. Do these hypotheses really have observable evidence to back them up? Challenge the evidence to make sure it's good enough. Keep track of these hypotheses in your plan going forward.

## 1

#### **Top Right**

Focus on the top right quadrant to identify which hypotheses to test first. This defines your near-term experimentation. Create experiments to address these high-risk themes in your business.



Important



Unimportant





#### 2. Run Experiment

Every experiment has a specific run time to generate sufficient evidence that you can learn from. Make sure you run your experiments almost like a scientist, so that your evidence is clean and not misleading.

Unimportant

### Assumptions mapping 2: Prioritizace

Důležitost

Knowns	Assumptions	Unknowns



Důležitost

## Výzkumné otázky

4	Knowns	Assumptions	Unknowns

- Kvalitativní: Jak, proč?
- Výzkumná otázka
  - Zkoumatelná
  - Specifická
  - Dostatečně Zobecnitelná
- Pochopení:
  - vašeho uživatele,
  - jeho situace,
  - Motivací, cílů, potřeb



### Výzkum od stolu

Co můžeme zjistit z existujících zdrojů



### Výzkum od stolu

Co můžeme zjistit z existujících zdrojů

- Analýza konkurencie
- Kľúčové slová
- Voľné "googllenie"
  - Google scholar



## Metody externího výzkumu



### Druhy výzkumu





### Kvalitativní výzkum

Proč bychom měli dělat kvalitu?



### Kvalitativní výzkum

### Proč bychom měli dělat kvalitu?

<ul> <li>→ Zjistíte neznámé neznámé</li> <li>◆ Nezávislé na vašich předpokladech</li> <li>→ Hluboké a detailné</li> </ul>	Known	Things we are aware of and understand	Things we are aware of but don't understand
<ul> <li>Huboke a detaine pochopení</li> <li>Vytváření teorií, modelů, hypotéz</li> </ul>	Unknown	Things we understand but are not aware of	Things we are neither aware of nor understand
		Knowns	Unknowns
			📥 Red Hat

### Kvalitativní výzkum

Proč bychom neměli dělat kvalitu?

- → Je to těžké
- → Zabere to hodně času



→ Halo effect

 $\rightarrow$ 

→ Efekt prvního dojmu

→ Availability (dostupnosti)


# Výzkumné metody

TYPE	EXPERIMENT
Exploration	Customer Interview p. 106
	Expert Stakeholder Interviews p.
	Partner & Supplier Interviews p. 1
	A Day in the Life p. 116
	Discovery Survey p. 122
Data Analysis	Search Trend Analysis p. 126
	Web Traffic Analysis p. 130
	Discussion Forums p. 134
	Sales Force Feedback p. 138
	Customer Support Analysis p. 142
Interest Discovery	Online Ad p. 146
	Link Tracking p. 152
	404 Test p. 160
	Feature Stub p. 156
	Email Campaign p. 162
	Social Media Campaign p. 168
	Referral Program p. 172
Discussion Prototypes	3D Print p. 176
	Paper Prototype p. 182
	Storyboard p. 186
	Data Sheet p. 190
	Brochure p. 194
	Explainer Video p. 200
	Boomerang p. 204
	Pretend to Own p. 208
Preference &	Product Box p. 214
Prioritization Discovery	Speed Boat p. 218
	Card Sorting p. 222
	Buy a Feature p. 226

# ZDROJE

Online:

- <u>https://100metod.cz/</u>
- <u>https://nngroup.com/</u>

# Knihy:

- Just enough research
- Surveys that work
- Rocket surgery made easy

# Interviews

### Co z nich zjistíte

- Pochopení zákazníka
  - Kto to je?
  - Persony, segmenty
- Mentální modely
  - Jak nad tím lidi uvažují?
- Cesta zákazníka
  - Jaké mají procesy?
- Příležitosti
  - Co lidem chybí?
  - Co je opruzuje?
  - Co je pro ně důležité?

### Co z nich nezjistíte

- Budoucí chování
  - Koupili by jste si?
  - Kolik by jste zaplatili?
- Kolik?
  - Kolik lidí to vnímá takto
  - Kolik lidí je v tomto segmentu...



# Interview

# Jak je připravit

### Vychádzame z výskumných otázok

3 časti:

- Warmup
- Hlavná časť
- Ukončovanie

### Druhy otázek

- Ask about sequence. "Describe a workday. What do you do when you first sit down at your station? What do you do next?"
- Ask for specific examples. "What was the last movie you streamed?"
- Ask for the complete list. "What are all the different apps you have installed on your smartphone?" "What else?"
- Ask about relationships. "How do you work with new vendors?"



"If I had asked people what they wanted, they would have said faster horses." -Henry Ford

# Interview: Čekárna u vašeho praktického lékaře

- Identifikujte výzkumnou otázku
  - ♦ Kto to je?
  - Jak zapadá do jeho života
  - Jaké je pro něj čekání v čekárně?
- Napište scénář
  - Otázky, které se skutečně zeptáte

5 minut

- 1 min výzkumná otázka
- 4 min scenář



# Interviews

# Jak na ně

# Principy

- Naslouchání
  - Naslouchejte
  - Mluvte co nejméně
- Vyhoď te si z hlavy předpoklady a očekávání
  - nenavázejte!
- Zklidněte ego
  - Designera
  - Researchera

### Tipy

- Mlčení 3 sekundy
- Opakování
- Bumerang
- Nedokončené otázky



# Interview: Čekárna u vašeho praktického lékaře

# Skupiny po 4

Role:

- Zapisovatel
- Interviewer
- Interviewee/participant/uživatel
- pozorovatel

10 minut:

- 1 minuta rozdělení rolí
- 5 minut rozhovor
- 3 minuty feedback



# Analýza

# Kvalitativních dat

#### Proper

- Nestrukturovane:
  - Affinity diagram zjištěn témat
- Strukturovane:
  - Mental model
  - Persona
  - Empathy map

### Quick and dirty

- Sepište si hlavné pointy
- POV statements



# Persona

# Analýza kvalitativních dat

# Cílová skupina

- Formální kritéria

Segment

- Podskupina cílové skupiny

### Persona

- Fiktivní typický reprezentant segmentu
- Slouží k empatii a alignmentu



"To be good at PR you need to know about what is in and be up on all trends"

#### Bio

Jane is a passionate freelancer who gives her all to each and everyone of her clients. She has trouble keeping track of tasks, and managing all of her client accounts. She enjoys a thriving social life, and enjoys

#### Age: 34

Job: Freelance PR Strategist Location: Brooklyn, NY Status: Single, no kids Income: \$145,000

#### Behaviors

- She's not afraid of hard work, and to spend all day in the office,

- Uses Instagram and Twitter to keep up on the latest trends.

#### Goals

- Manage all of her clients

- Looking for new products to enhance productivity

#### Pain Points

- Since Jane freelances, each client makes her have an email account with their company. She has a hard time keeping track of all of them, and responding promptly

#### Motivations











Experiments Reduce the Risk of Uncertainty

# Person 1

- Born 1948
- Grew up in England
- Married twice
- 2 children
- Successful in business
- Wealthy



Prince Charles

# Person 2

- Born 1948
- Grew up in England
- Married twice
- 2 children
- Successful in business
- Wealthy



Ozzy Osbourne



#NetBaseWebinar

# Persona

# Analýza kvalitativních dat

Typické info do persony

- Persona Group (i.e. web manager)
- Fictional name
- Job titles and major responsibilities
- Demographics such as age, education, ethnicity, and family status
- The goals and tasks they are trying to complete using the sitesionate freelancer who gives
- Their physical, social, and technological environment
- A quote that sums up what matters most to the persona as it relates to your project
- Casual **pictures** representing that user group

Age: 34 Job: Freelance PR Strategist Location: Brooklyn, NY Status: Single, no kids Income: \$145,000

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# Motivations

Happiness





# Persona - practical example



Michael Maintenance

Role: System Administrator

**Company & Team:** Works at an University. Is on a team of 5 people, and he is responsible for all Linux systems running at the university.

**Size of infrastructure:** 300 RHEL systems, across different departments at the university. **Location and type of infrastructure:** RHEL 7 and 8 systems; Interested in RHEL 9 but no active use yet. Hosted on 2 public clouds (one department requires the use of Azure).

Key tasks:

- Patch systems for security & stability (<u>Insights research</u>)
- Provision systems on demand
- Install software
- Manage user access
- Monitor performance

#### **Characteristics & Tasks:**

- · Monitors and maintains systems that are used by others in his company
- · Works towards a regular patch cycle
- Interested in automating as much as possible manual patching takes 20-25 hours a week!

#### Other considerations:

· Different groups in his org may have different SLAs for service



# Workshop

Práce na vašem projektu



# Agenda workshopu /domácí úkol

- ➔ Představení domácího úkolu
- → Feedback na úkoly z minula
- Práce na domácích úkolech"
  - Formulace výzkumných otázek
  - Příprava scénáře
  - Realizace interview
  - Analýza:
    - Persona
    - Empatická mapa
    - POV statements revize

#### Do příští hodiny

- → Výzkum od stolu (nepovinné)
- → Interview (2x30 min)
  - Výzkumné otázky
  - Scenář
  - Persona
  - Empatická mapa
    - PoV statements revize



# Interview

### Do příští hodiny

- Stanovit výzkumné otázky
- Sepsat scénář
  - Kdo to je
  - Co je pro něj důležité souvislosti s počasím / vaším tématem
    - Jak nad tím uvažuju
    - Jaké má emoce
    - Jak to řeší jaké mé teď procesy
- Udělat 2 interviews na 30 min
  - Najít vhodné respondenty



# Interview - analýza

#### Do příští hodiny:

#### 1. Personu



"To be good at PR you need to know about what is in and be up on all trends"

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#### Goals

- Manage all of her c - Looking for new pr

#### Pain Points

- Since Jane freeland have an email accou has a hard time keep responding prompth

#### Motivations





### 2. Empatickou mapu

#### 3. PoV statements



### POINT OF VIEW STATEMENT

(User name)	(Verb)	
because		
	(Surprising Insight)	



# Interviews

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# Motivations

lappiness

**Red Hat** 

#### Creating a good business hypothesis

When creating hypotheses you believe to be true for your business idea, begin by writing the phrase "We believe that..."

"We believe that millennial parents will subscribe to monthly educational

Be mindful that if you create all of your hypotheses in the "We believe that..." format, you can fall into a confirmation bias trap. You'll be constantly trying to prove what you believe, instead of trying to refute it. In order to prevent this from occurring create a few hypotheses that try to disprove your assumptions.

"We believe that millennial parents won't subscribe to monthly educational science projects for their kids."

You can even test these competing hypotheses at the same time. This is especially helpful when team members cannot agree on which hypothesis to test.

#### Characteristics of a good hypothesis

A well-formed business hypothesis describes a testable, precise, and discrete thing you want to investigate. With that in mind, we can continue to refine and unpack our hypotheses about the science project subscription business.

	n	
Testable Your hypothesis is testable when it can be shown true (validated) or false (invali- dated), based on evidence (and guided by experience).	<ul> <li>We believe millennial parents prefer craft projects.</li> </ul>	We believe millennial par- ents prefer curated science projects that match their kids' education level.
Precise Your hypothesis is precise when you know what success looks like. Ideally, it describes the precise what, who, and when of your assumptions.	<ul> <li>We believe millennials will spend a lot on science projects.</li> </ul>	We believe millennial parents with kids ages 5–9 will pay 515 a month for curated science projects that match their kids' education level.
Discrete Your hypothesis is discrete when it describes only one distinct, testable, and precise thing	<ul> <li>We believe we can buy and ship science project boxes at a profit.</li> </ul>	We believe we can purchase science project materials at wholesale for less than \$3 a box.
you want to investigate.		We believe we can ship science project materials domestically for less than

×

~

# Hypothesis

The hypothesis has its roots in ancient civilization. The English word "hypothesis" comes from the Greek word hupothesis which means "to suppose." Some even refer to a hypothesis as an educated guess. Hypotheses are instruments you use to prove or refute your assumptions.

For the purposes of Testing Business Ideas, we focus on your business hypothesis, which is defined as:

- · an assumption that your value proposition, business model, or strategy builds on.
- · what you need to learn about to understand if your business idea might work.



### Strong(er) Evidence

### 1. Opinions (beliefs)

When people say things like "I would...," "I think \_\_\_\_\_ is important," "I believe...," or "I like..."

### 2. What people say

What people say in an interview or survey is not necessarily what they do in real life or will do in the future.

# Facts (events)

When people say things like "Last week I \_\_\_\_\_," "In that situation I usually \_\_\_\_\_," or "I spent \_\_\_\_\_ on."

### What people do

Observable behavior is generally a good predictor of how people act and what people might do in the future.

# 3. Lab settings

When people are aware that you are testing something, they may behave differently than in a real world setting.

### **Real world settings**

The most reliable predictor of future behavior is what you observe people doing when they are not aware they are being tested.

# **USABILITY PRINCIPLES**

Nielsen's 10 Usability Principles

# **DESIGN THINKING :** A NON-LINEAR PROCESS





60

# NIELSEN'S USABILITY HEURISTICS

- Jakob Nielsen's 10 general principles for interaction design
- They are called "heuristics" because they are broad rules of thumb and not specific usability guidelines





**Visibility of System Status** 



Keep users oriented and clear about where they are in the system or where they are up to in a

"I know what's going on."

process.







### Match between the system and the real world

Follow real-world conventions, making information appear in a natural and logical order.

"I know what you're talking about."





### **User Control and Freedom**



Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them.

"Oops, let me out of here."



# "Oops, let me outta here"

Allow people to change or delete items in a shopping cart as seen in this example from Inkling. It's also useful to allow them to continue shopping.





### **Consistency and Standards**

Follow platform conventions. Principle of least surprise.



"Seems familiar, makes sense."









### Help Users Recognize, Diagnose, and Recover from Errors

Error messages in plain language. Give users understanding of how they will solve the problem in plain language.

"I know what went wrong, I can fix it."

#### Message from webpage



Adult 1: Title is required. Adult 1: First Name is required. Adult 1: Last Name is required. Adult 1: Please choose Priority Boarding option. Adult 2: Title is required. Adult 2: First Name is required. Adult 2: Last Name is required. Adult 2: Please choose Priority Boarding option. SMS confirmation option not selected Please indicate that you have read and understand the terms and conditions to continue.



# **Oops!**

We can't seem to find the page you're looking for.

Error code: 404

70

Here are some helpful links instead: Home Search Help Traveling on Airbnb Hosting on Airbnb Trust & Safety

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æ	2	

Or start a new account	
Choose a username (no spaces)	
bert	A bert is already taken. Please choose a different username.
Choose a password	
	Passwords must be at least 6 characters and can only contain letters and numbers.
Retype password	ecors and remotes.
Email address (must be real?)	
not an email	A The email provided does not appear
Send me occasional Digg updates.	to be valid



### **Error Prevention**

Even better than good error messages is a careful design that prevents a problem from occurring in the first place.

"Glad I didn't do that."







olympics olympics 2016 olympic trials olympics schedule

Press Enter to search.



#### **Recognition Rather than Recall**

Make objects, actions, and options visible.



"I know what I need to do here."



# Recognition rather than recall

# "I know what I need to do here"

Minimise the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.





74

### Flexibility and efficiency of use

Cater the system to the inexperienced and expert user. Encourage exploration. Offer accelerators.



"Allow me to do more of less."





### **Aesthetic and Minimalist Design**

Dialogues should not contain information that is irrelevant or rarely needed. Simplicity.



"Looks good, works beautifully."



	Go	ogle	
Ĩ		3	Ŷ
	Google Search	I'm Feeling Lucky	
	Google offe	red in: čeština	



### **Help and Documentation**

Integrate help with the system. "How do I...?"



"Okay, I need help."



