



The Open
University

Weather-it: Evolution of an Online Community for Citizen Inquiry

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Outline

- Citizen Inquiry
- Weather-it
- nQuire toolkit
- Community preparation
- Research questions
- Data collection and analysis
- Results
- Conclusions

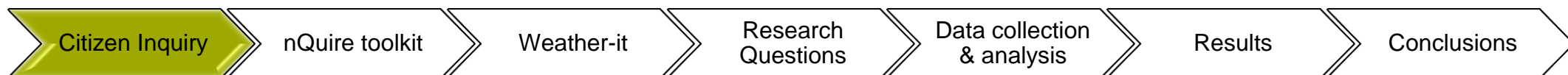
Citizen Inquiry

What is it?

- Informal science learning approach
- It aims to engage citizens in online scientific investigations (community science)

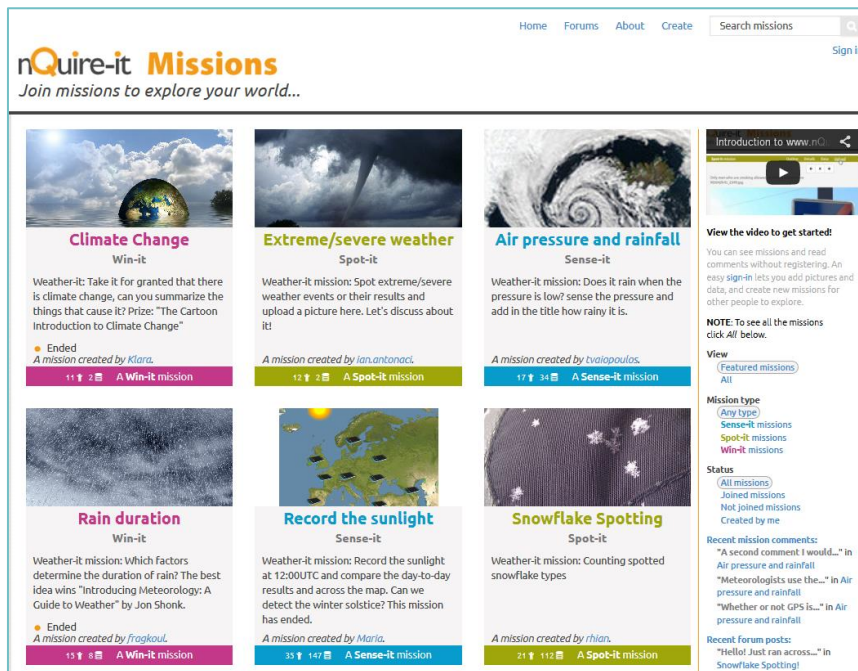
Citizens:

- plan and implement their own investigations
- are sparked by personal experience of everyday science
- contribute to other investigations



nQuire toolkit

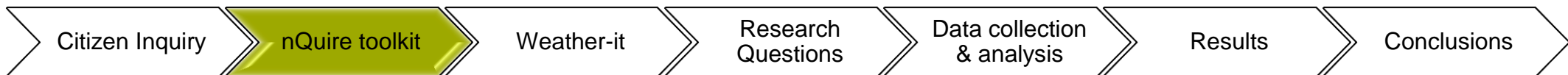
- Citizen Inquiry software
- nQuire-it platform and Sense-it Android app



nQuire-it platform
<http://www.nquire-it.org/>

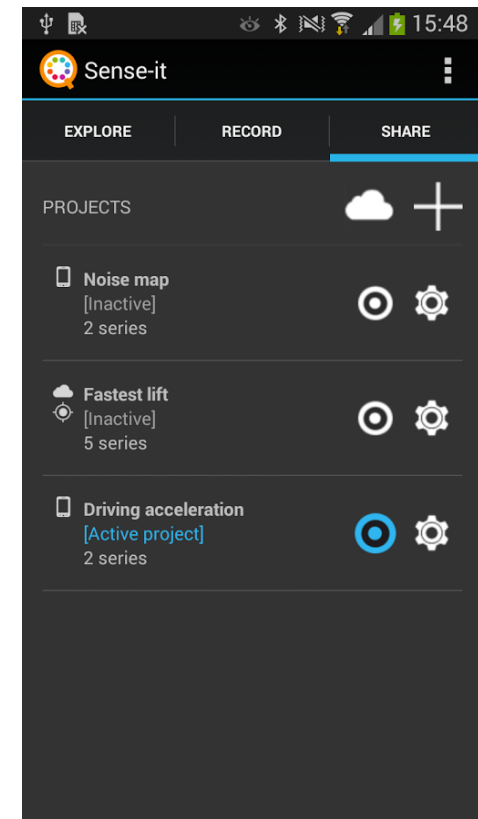


Sense-it app
 Play Store



Sense-it Android app

- Activates the existing sensors of Android smartphones and tablets
- Light, humidity, pressure, temperature, etc.
- Allows users select sensors for their measurements and then visualize, store and download the log files on their mobile devices
- Creates profiles that can be connected to nQuire-it platform (registration only with Google accounts)
- Uploads automatically the measurements to the platform



Citizen Inquiry

nQuire toolkit

Weather-it

Research
Questions

Data collection
& analysis

Results

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nQuire-it platform

- Three types of missions (investigations)



Air pressure and rainfall
Sense-it

Weather-it mission: Does it rain when the pressure is low? sense the pressure and add in the title how rainy it is.

A mission created by tvaopoulos.

17 ↑ 34 🗄 A Sense-it mission

Sense-it
(sensors)



Identify the cloud!
Spot-it

Weather-it mission: Clouds have an enormous influence on the Earth's energy balance, climate, and weather. Spot and identify them!

A mission created by Maria.

56 ↑ 182 🗄 A Spot-it mission

Spot-it
(pictures)



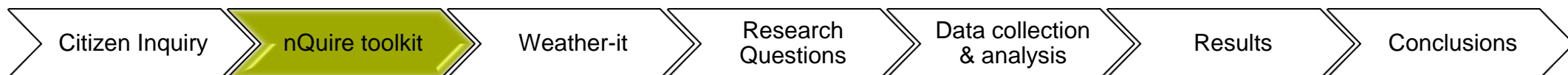
Rain duration
Win-it

Weather-it mission: Which factors determine the duration of rain? The best idea wins "Introducing Meteorology: A Guide to Weather" by Jon Shonk.

● Ended
A mission created by fragkoul.

15 ↑ 8 🗄 A Win-it mission

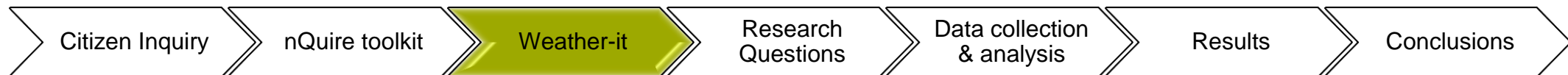
Win-it
(text)



Weather-it



- Citizen Inquiry community for weather investigations
- Core group (experts and non-experts)
- Recruiting members/promoting the community
- Experts and non-experts (101 participants in total)
- Accommodated by the nQuire toolkit
- Project communication (guidance, updates, announcements, mailing list, email notifications, Facebook/Twitter groups, contact with inactive users, prizes)



Activities

Author	Votes	Title	Submitted	
byanar8	👍 1 🗨️ 0	Intensity and duration of rainfall are usually inversely related, high intensity storms are likely to be of short duration and low intensity storms can have a long duration	Yes	Open

Data

Mission comments

13/7/15 10:31 AM
 fragkoul said: 👍 0 🗨️ 0 !

A second comment I would make is that rainfall observations should be somewhat "averaged" over the whole day. For example: Pressure=990mb and there was rain a few hours ago. It is hard to get rain continuously when the pressure is low (which is a situation that can last up to 2-3 days).

Create a mission

As the mission owner, you decide which sensors to use to collect data. Some of the available sensors on mobile devices at the moment are: **Accelerometer, Sound, Magnetic field, Gyroscope, Orientation, Pressure, Ambient temperature, Relative humidity.** [Find out more about sensors.](#)

Enter the title of your new **Sense-it** mission and click "Create".

Title: Create

Forum Discussion

Forum > Weather-it Missions
 Sign in to post new threads.

Thread	Starter	Last post	Replies
Snowflake Spotting!	rhian	DLema 8/6/15 3:00 AM	10
Join my mission	Klara	Maria 9/2/15 11:59 AM	1
Rain duration	fragkoul	ian.antonaci 4/2/15 11:07 AM	7



Some cirrostratus on the top (?), altostratus (?)

p3tris
 27/2/15 12:17 PM
 👍 4 🗨️ 0 !
 2 comments

Votes

Comments

LG G3	igloo	19/12/14 12:07 PM	925	👍 0 🗨️ 0 !
Toggle plot Open map				0 comments

Data

Citizen Inquiry

nQuire toolkit

Weather-it

Research Questions

Data collection & analysis

Results

Conclusions

Research Questions

- *How does this ownership of the investigations influence the participation of such a public engagement community?*

Recruitment

Where did the members hear about “Weather-it”?

Motivation

Are the motivations for participating in this Citizen Inquiry project different from other Citizen Science projects?

Participants

Who participates in Citizen Inquiry communities?

Evolution

How did the community evolve? What affected its evolution?

Sustainability

How sustainable was the community?

Identity

Do the members feel like a part of the community? If not, why?

Citizen Inquiry

nQuire toolkit

Weather-it

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Data Collection and Analysis

Questionnaire

- Recruitment, motivations, participants, sustainability, identity
- Qualitative & Quantitative data
- Thematic Analysis
- Chi-square analysis
- Survey Monkey & SPSS & nVivo

Log Files

- Community evolution
- Social Network Graphs
- Who contributed to whom: (a) membership (b) data (c) comments, (d) likes (e) forum posts
- Gephi

Citizen Inquiry

nQuire toolkit

Weather-it

Research
Questions

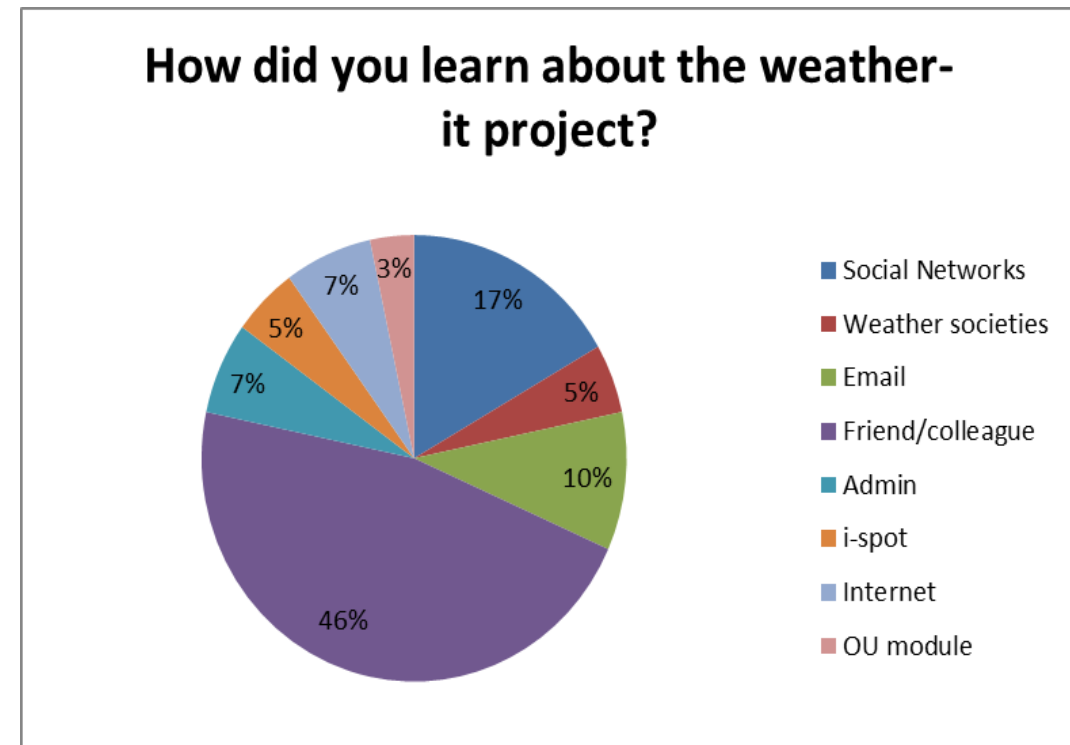
Data collection
& analysis

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Recruitment

- The word-of-mouth recruitment of Weather-it members seems to be the most effective means of inviting people
- Mission and data owners may be the source of the 'news'.



Participants

Expert (13%)	Intermediate (25%)	Beginner (62%)
Meteorologist	In related job	Sailor/photographer
Meteorology Professor	Owner of weather station	Interested in strange phenomena, sky colours, clouds
PhD student	BSc student in Meteorology	Weather books
BSc in Meteorology	Racing sailor	Physics A' level
Weather association member	Familiar with weather forecasts	Country of accommodation
		Curious/want to learn
		Weather data collection and monitoring

Citizen Inquiry

nQuire toolkit

Weather-it

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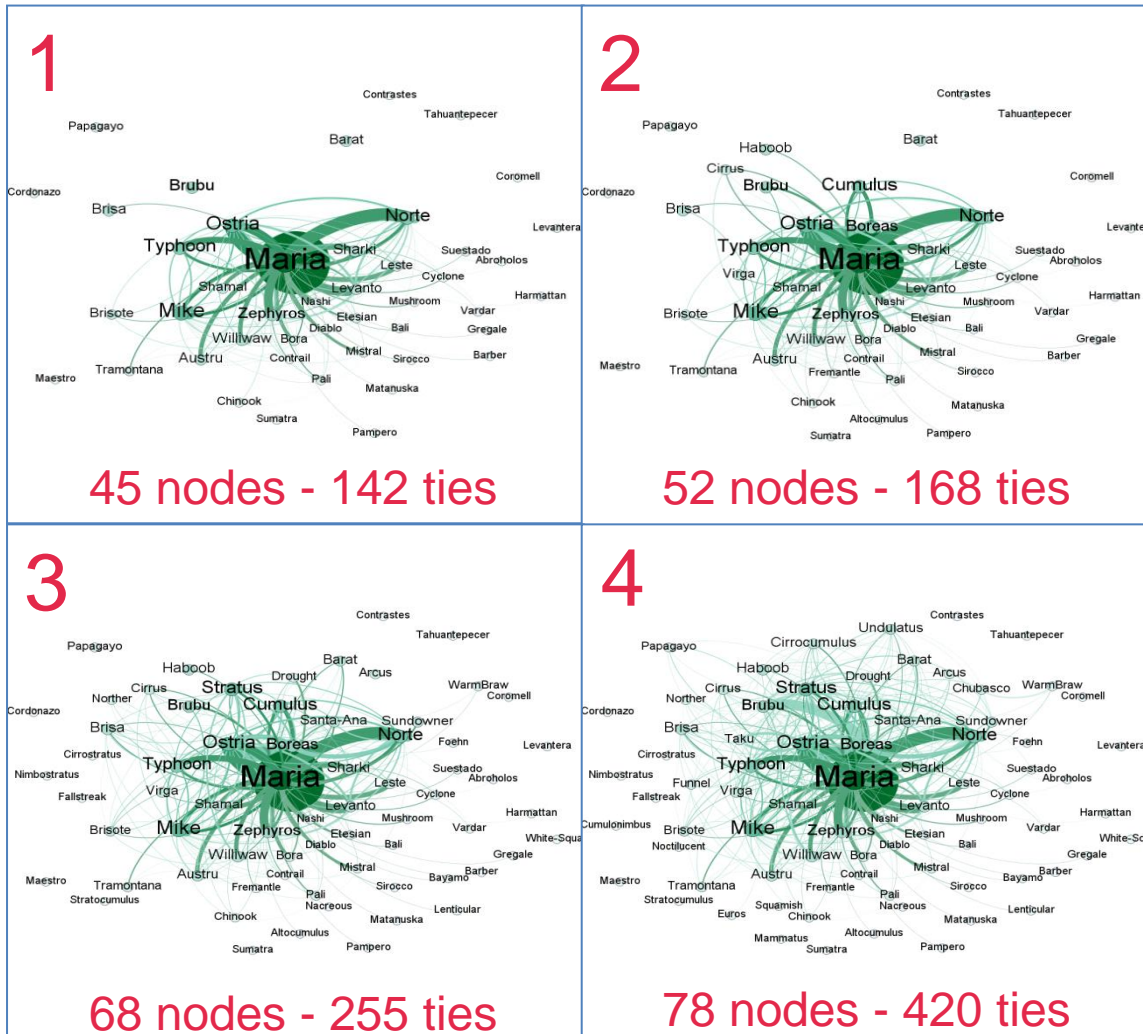
Conclusions

Motivation

- Interest in topic most popular motivation
- Contribution to science not that popular
- Friends and Community also important
- Experts → topic
- Intermediates & beginners → more reasons



Evolution



- Early life: Advertisement – rapidly expands (1)
- Death: Unchanging (2) – end of mission, Christmas break, lack of notifications
- Evolving - notifications & updates (3)
- Maturity: Evolving steadily – personalised communication (4)

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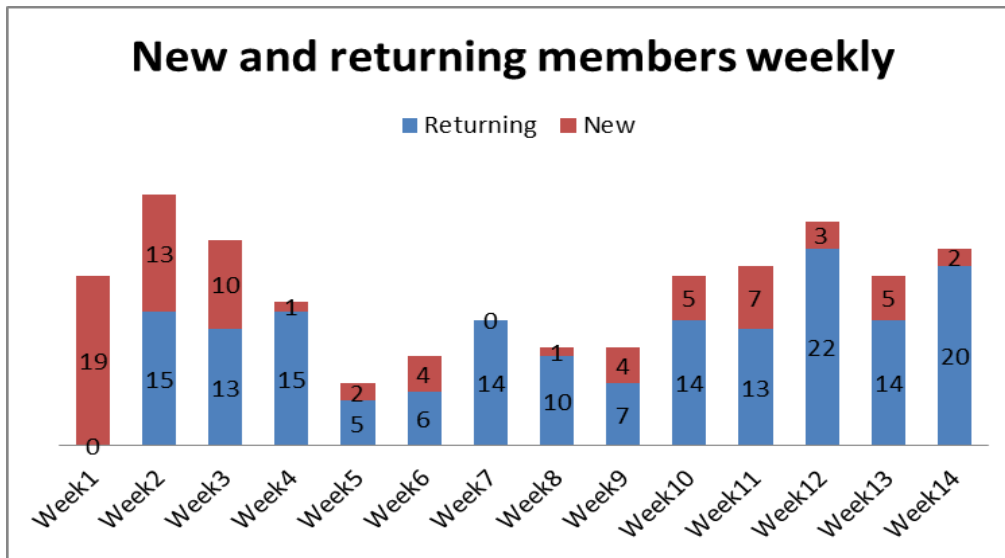
Research Questions

Data collection & analysis

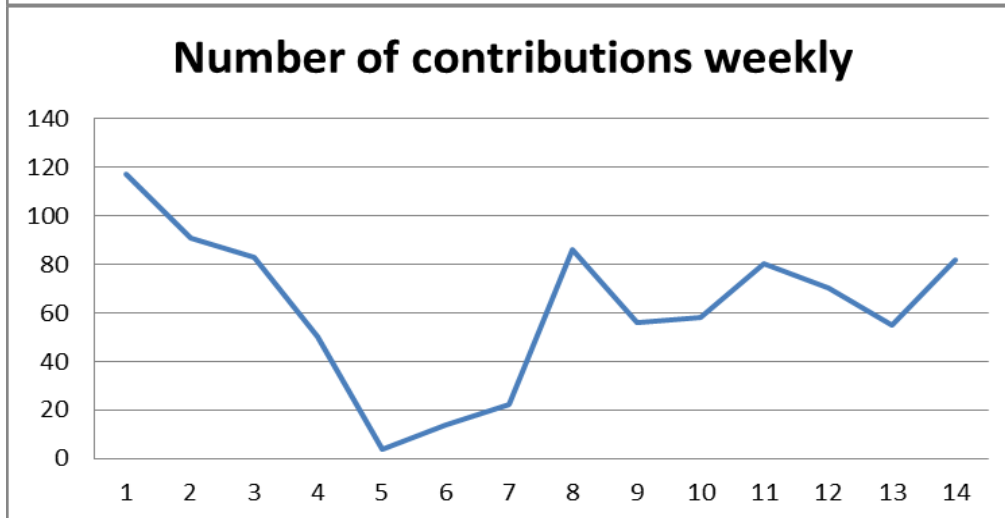
Results

Conclusions

Sustainability



- Week 4: decline particularly of the new members
- Week 7: increase
- Week 10-14: stable with small changes



- Week 1: high activity
- Week 5: reached the bottom
- Week 7: takes off
- Week 8: second top point
- Weeks 9-14: stable

Identity

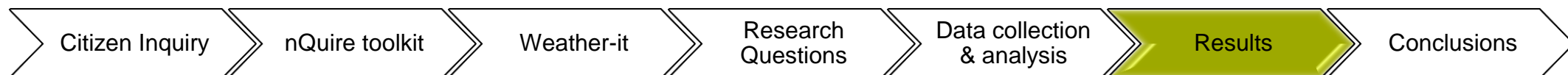
Are you feeling like a part of the community?

- Yes – 68%
 - 78% remain active and 22% are not

- No – 32%

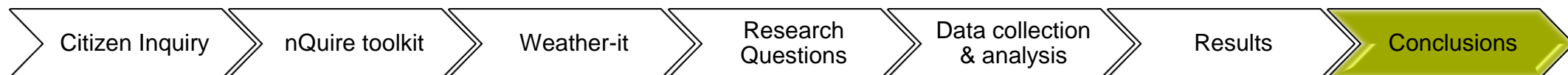
(Lack of time/visits/involvement/participation/notifications, perceptions of the members on the proper type of communication, the age match, membership status)

- 53% abandon it



Conclusions

- Word-of-mouth most popular recruitment – investigation and post owners may have worked as transmitters
- Personal incentives for joining the project – need to focus the recruitment and the projects features on those needs.
- Experts are attracted to the topic, non-experts have more motives (friends, community) – motivation enhancement for experts.
- Project communication important for members' retention.
- Feeling a part of the community increases the likelihood to remain active – eliminate reasons that make members not feeling a part of the community



The End!

Any questions or feedback?

Contact me:



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Thank you!