Crowdfunding and Sciences: Opportunities and Risks for Scientists

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Analog Genetic Circuits for Interactive Learning

By Herbert M Sauro and Bennett Ng

Backed by Michael Sauro, John A. Booth, HAROLD H KAWAGUCHI, Carl Johansen, Andy Sawyer, Dustin Chang, Laurie Rockenbeck, Antoinette Sawyer, Ananya, Deepak Chandran, and 28 other backers

Source: https://experiment.com/projects/genetic-circuits-for-interactive-learning
Agenda

- Context
- Types
- Content
- Process
- Opportunities
- Risks
Context: Budget cuts

- EU budget cuts: Horizon 2020 by app. 50%
- UZH third-party funds: 22%
Context: Crowdfunding platforms for Sciences

- https://www.thinkable.org
- https://experiment.com
- https://walacea.com
- https://www.sciencestarter.de
- https://www.kickstarter.com
- https://www.indiegogo.com
- Overview: fundedscience.com

- University-run Crowdfunding:
  - https://spark.ucla.edu
  - https://crowdfund.ucsf.edu
Context: Crowdfunding platforms for Sciences

- Small investments (2015, experiment.com)
  - Maximum: US$139,951
  - General average: US$6,306
  - Median: US$3,585

Source: Vachelard et al. 2016
Types

- Equity vs. Donation
- Partial vs. Full
- Small vs. Large
- Product vs. Knowledge
- All or nothing vs. Keep it all
- Science-focused vs. General-interest platform
- Private vs. University-owned platform
Info Where You Go--Internet of Things, Without The Internet!

Monitor remote devices using cellular phone SMS text messages when you don’t have the luxury of the internet.

Created by
Sam Morse and
Michael Dorin

17 backers pledged $970 to help bring this project to life.

Source: kickstarter.com
Content

Source: kickstarter.com

Pledge $5 or more

The Board. Our Dallas/Maxim 1-wire device board with bill-of-materials and assembly instructions. Also priority access to the Android software (Datometer-CoAP-Client and Datometer-CoAP-Gateway) as well as the Raspberry Pi Software (Datometer-CoAP-Server) when released.

ESTIMATED DELIVERY: Feb 2015
SHIPS TO: Ships anywhere in the world

3 backers

Pledge $15 or more

The kit. Our Dallas/Maxim 1-wire device board, a Vxtech DS18b20 Waterproof Temperature Sensor, a 4.7K Resistor and priority access to the Android Software (Datometer-CoAP-Client and Datometer-CoAP-Gateway) as well as the Raspberry
**Info Where You Go**

Monitor remote devices using cellular phone SMS text messages when you don’t have the luxury of the internet. Our offering is a combination of hardware and software that we have put together to allow exploitation of IoT, without the internet. (See the FAQ for information on inexpensive plans for cellular phone SMS service)

Put simply, the "human interface" Android device can query a remote sensor (via CoAP and Optimized SMS), like a temperature sensor. A CoAP/ Optimized SMS gateway running on a remote android will translate and forward messages to and from a remote sensor manager, in our case a Raspberry Pi with a temperature sensor.

**Pledge $21 or more**

The kit. Our Dallas/Maxim 1-wire device board, a Viterbi DS18b20 Waterproof Temperature Sensor, a 4.7k Resistor, 4GB SD Card loaded and booting the Datometer-CoAP-Server and priority access to the Android Software (Datometer-CoAP-Client and Datometer-CoAP-Gateway) when released.

**Pledge $26 or more**

Same as above, but board is assembled and tested. Our Dallas/Maxim 1-wire device on-board a Viterbi DS18b20 Waterproof Temperature Sensor.
Content

March 17, 2015

New documentation available

Our CoAP SMS product now has a lot of documentation available. We've added documentation pertaining to assembly and a bill of materials, instructions on how to get the source code...
Read more

March 12, 2015

Android gateway and app now available for download

We're proud to release the first versions of our Android gateway and temperature monitoring apps. To download, please visit http://datometer.com/products.html

Source: kickstarter.com
Content

- Title
- Author(s)
- Investment goal and status
- Multimedia: videos*, pictures, illustrations, animations
- Description*
- Rewards
- Blog, forum, FAQs on Funding-page
- Social Media*
- Media Coverage (e.g., Wired, ...)
- Contact information
Content : Description

- Audience
- General interest
- Personal motivation, expertise, and uniqueness
- Research question
- Relevance and uniqueness of project
- Challenges
- Existing reviews
- Publications
- Budgeting
- Future use of findings, patents, etc.
- Schedule (duration, place, involved people, etc.)
- Limitations
- Institutional support (ethical review, etc.)
Content: Video

- Storyboard
- Research’s presentation skills and willingness
- Quality of recording (sound, video, performance, cutting, animations, music, etc.)
- Production time and costs
- Available production team (Chair, University, external)
Content : Social Media

- Additional to media coverage
- Steady updates
- Conversation, not “notification”
  - Motivate conversations (e.g., by asking)
- Maintenance time!
- Maintenance team
- Sharable material
- Cross-channel:
  - Facebook
  - Twitter
  - Instagram and Pinterest
  - ResearchGate and Academia
  - LinkedIn and Xing
  - Chair’s Blog, Researchers’ homepages, Reddit, Stackoverflow, etc.
Process

- Pre-Funding
  - Social networking !!!
  - Media production
  - Media planning
- Funding
  - Spreading (Social and Classic Media, own communication, e.g., email signatures)
  - Interacting (Social Media)
- Post-Funding
  - Updating
  - Giving thanks
  - Announcing succeeding or new projects
Process: Media Planning

- Warm-up before start of funding: min. 3 months
  - Building awareness and social networks
- Core information
- Continuous flow of information
- Personal / Backstage insights
- Increasing tension
- Milestones / incidents during funding period
Opportunities

- Bypassing government review committees and their reviews
- Success rate of science projects (ex. 2012): Kickstarter: 64%, Experiment: 38%
- Funding for unusual projects
- Exchange with funders
- Motivating existing funders for follow-up or new projects

Source: Cha 2015
Risks

- Vanity: the brand of a scientist who builds a fan base on social media
- Selection of projects by appeal: from institutional to public support
- Distraction that decreases productivity
- Non-transparency
- Lack of oversight: loss of accountability, enabling dangerous research
- Spread of ideas: Copycats
- Violation of non-disclosure agreements
- Risking future patent-based revenues
- Obligations: results, rewards, equity, communication
- Crowdfunding success might motivate further budget cuts

Source: Cha 2015
Contact

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References