PI*-POWERED EXPERIMENTER BENCH
BY WATTMINDERINSTRUMENTS.COM

A hotbed for scientific experimentation,
and STEM* * education
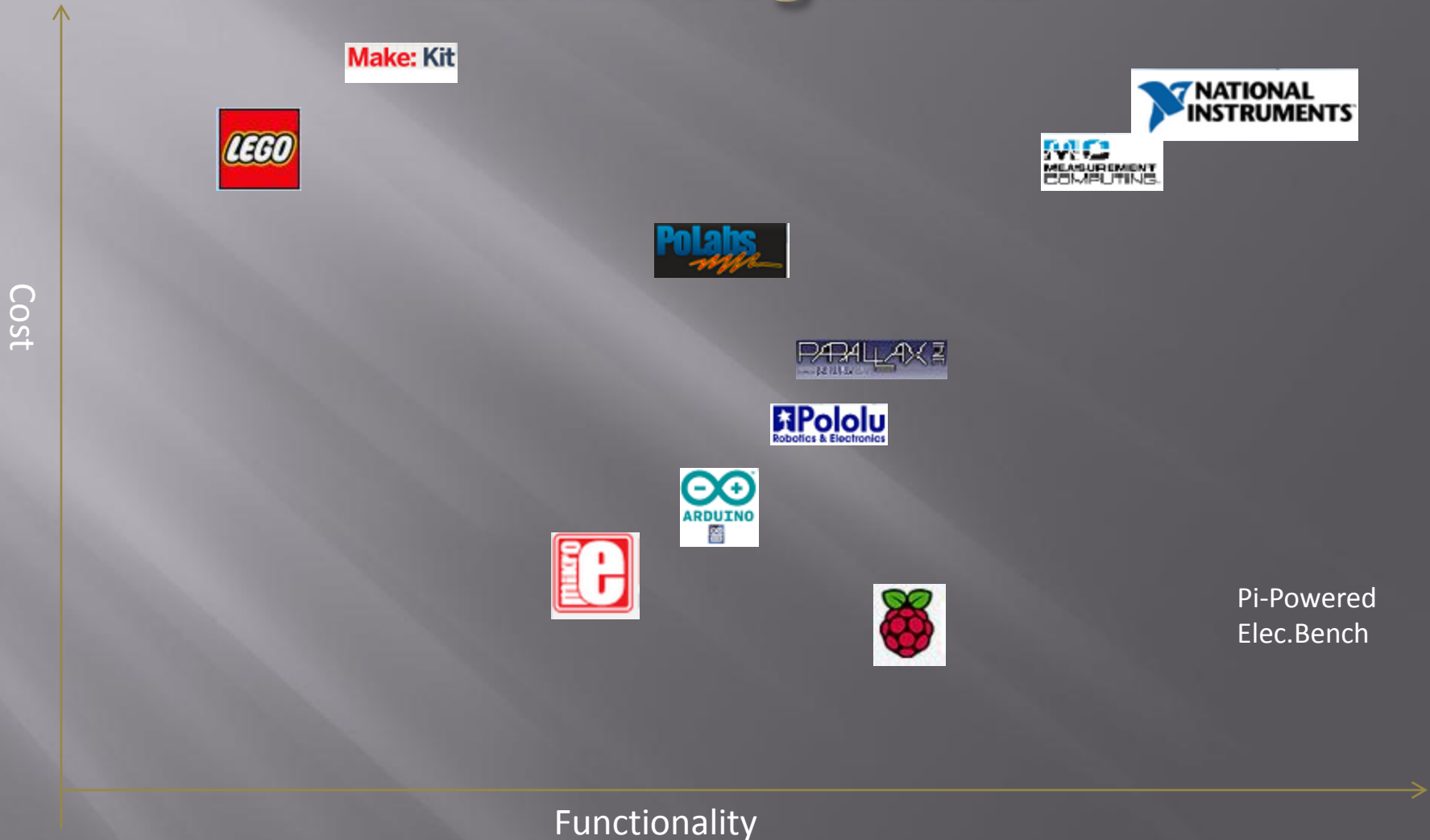
* Raspberry Pi, * * Science Technology Engineering & Math

Developing Mega-Trends

- Internet-of-Things, i.e. IP camera

- 10 Billion+ Information Appiances – Smartphones, PCs & Tablets as User Interfaces

- Low-cost distributed computing devices— Raspberry Pi $35, Arduino's $50

- Growing library of free online courses – Coursera, iTuneU, MOOC, Udacity, CodeCademy, Khan Academy, etc.

Problem: expensive, disjoint resources for electronic & science hobbyists

- Lego Mindstorm $280-$500
- Stand-alone electronic kits $10 - $150
- Difficult to assemble and associate with theory and learning
- Dry online science curricula

Market Segments

Cost (vertical axis)

Functionality (horizontal axis)

Make: Kit

LEGO

NATIONAL INSTRUMENTS

MEASUREMENT COMPUTING

PoLabs

PARALLAX

Pololu
Robotics & Electronics

ARDUINO

micro e

Pi-Powered
Elec.Bench

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Solution:
Portable Experimenter's Platform;
Portable STEM* Platform

In a flexible package, powered by Raspberry Pi, an intelligent, web-connected, easy to use platform offers low-cost fun learning environment for all ages.

Portable Experimenter's Platform
Powered by Pi
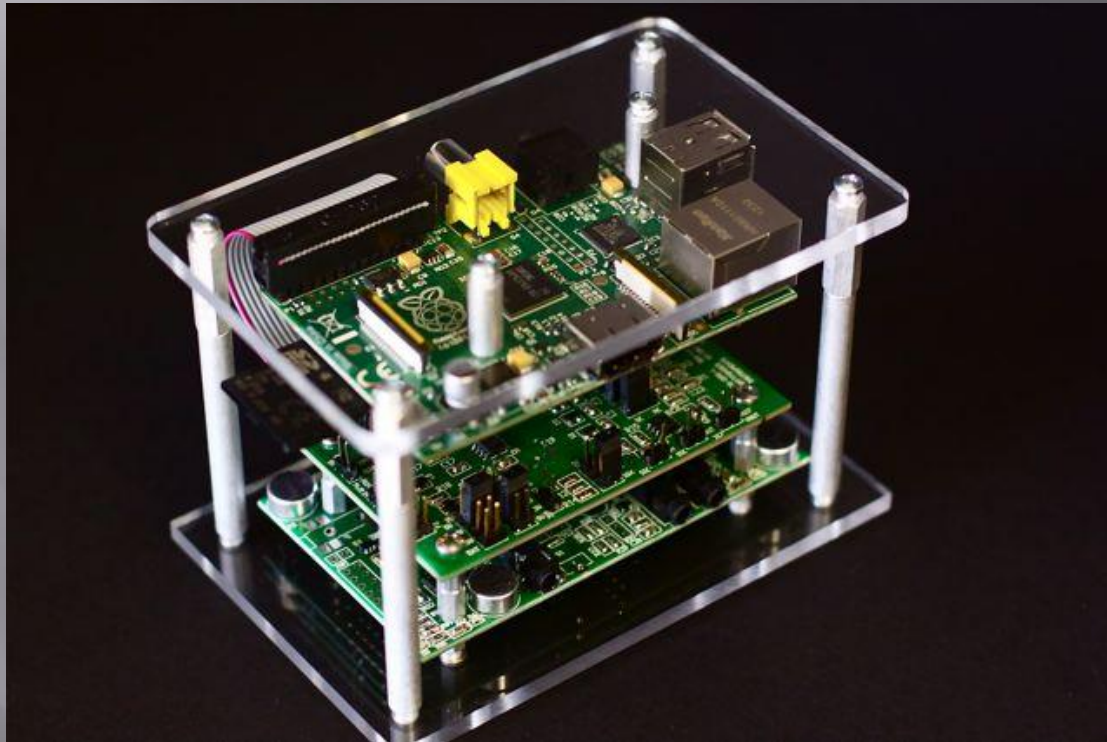
Small case configuration: Pi + Ras-Das-1 + Audio Explorer + Acrylic Case
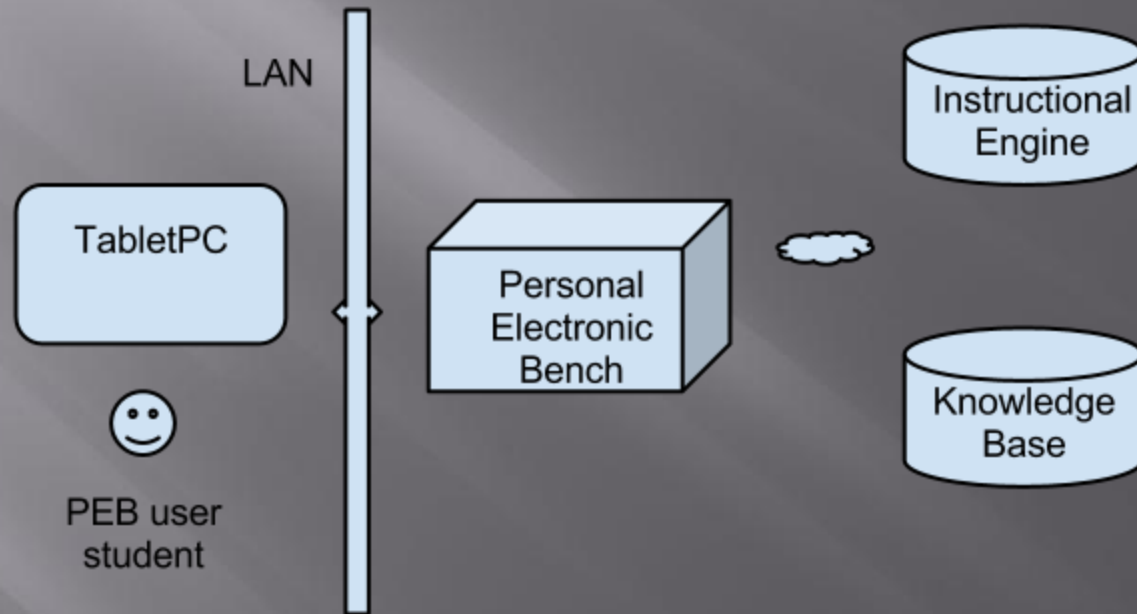
Startup Board Offerings

Kickoff configuration:

- Ras-Das-1: flexible, analog data acquisition system—8 channel, 200 ksps, 10 bit, configurable front-end.

- Audio Explorer: 4 Electret Microphones, input jacks, 50X amplification. 20-20K Hz response

- Clear Acrylic top and base, accessible sides, swap, expandable at will

Future: Distributed power supply, Ras-Das-2, Optical Explorer, etc. , inviting crowd inputs

A game-changing booster for STEM

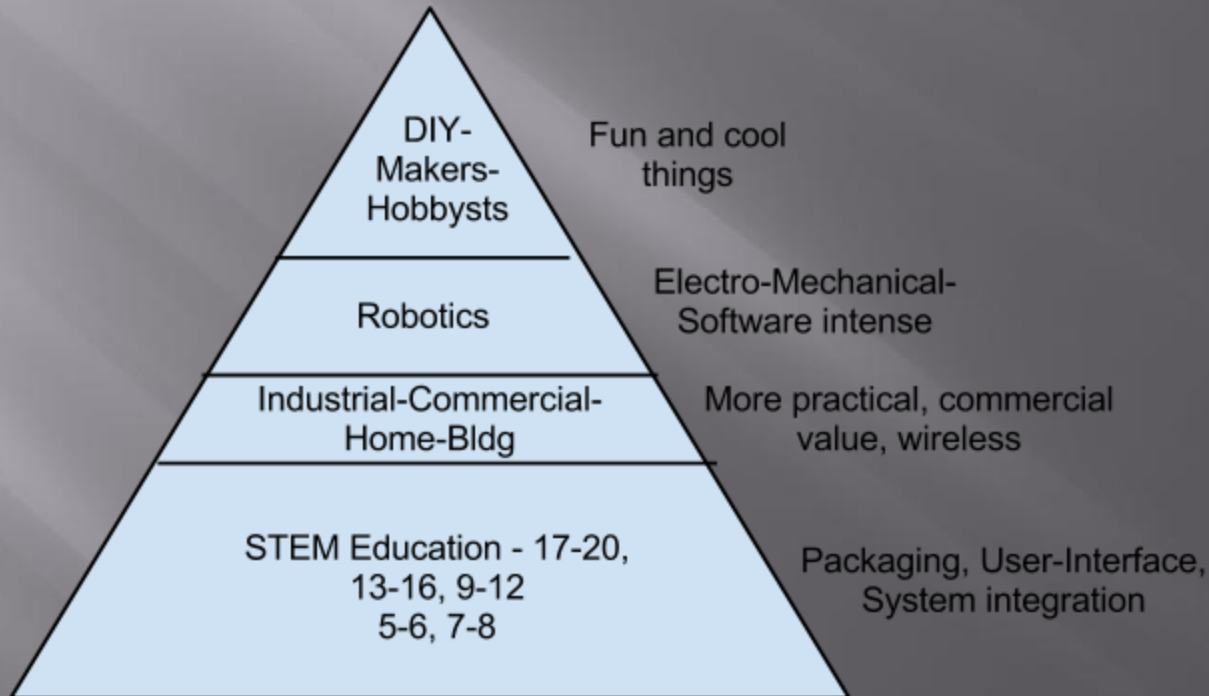In-Class or Online Instruction Delivery

LAN

TabletPC

Personal Electronic Bench

Instructional Engine

Knowledge Base

☺

PEB user student

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Markets Served

Markets for Wm's Personal Electronic Bench

DIY-Makers-Hobbysts — Fun and cool things

Robotics — Electro-Mechanical-Software intense

Industrial-Commercial-Home-Bldg — More practical, commercial value, wireless

STEM Education - 17-20, 13-16, 9-12, 5-6, 7-8 — Packaging, User-Interface, System integration

Some numbers

- 1 million Pi's sold in 10 months in 2012

- 1.5 billion of smart devices as user-interface

- 7+ million California students taking online university courses

- 32% of Cal college students taking online courses

- 144 Million students in 7-16 grades English speaking worldwide

Features-Benefits

- Raspberry Pi – local intelligence & link to web
- RasDas-to interact with a learner's environment
- AudioExplorer –for sound experiment, e.g. sonar
- Interactive, flexible experimental setup

Vision:

- Powerful server that customizes to the learner's profile, and recent learning experience
- Contextual access to online knowledgebase
- Learner's profile drives the content-depth of delivered curriculum by instruction engine server.

Go to market strategy

- Kickstarter roll-out, Mar.1st, 2013
- Will seek grants in Ed Tech, STEM—Gates Foundation, Intel, NSF, etc.
- Web Service instruction engine-tablet client development
- VC $ for accelerated commercialization , $5-$10M series A funding

Business Model

- First mover, Low-cost web appliance Hardware & Software
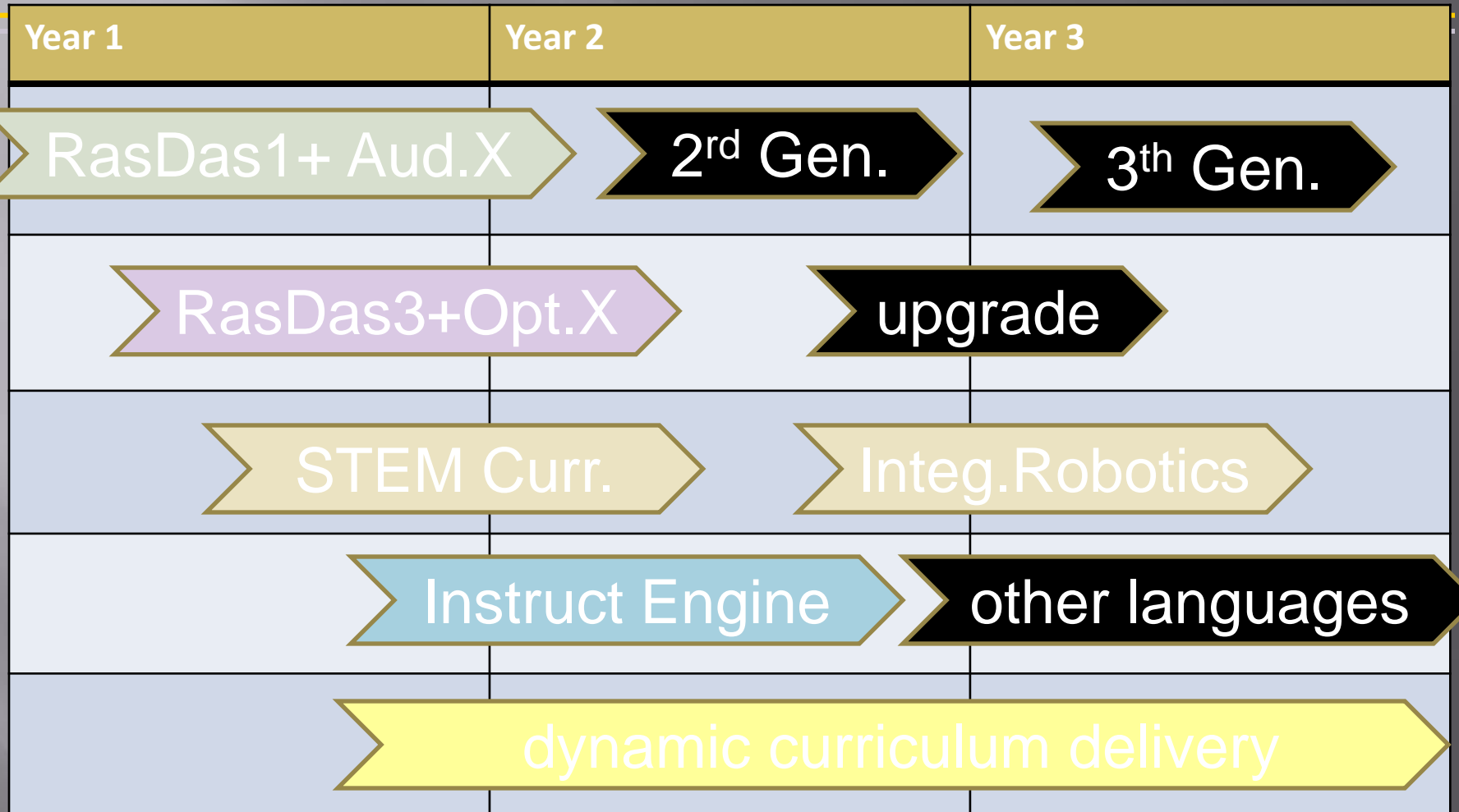
- Online course-ware for STEM, freemium

Example:

Financials

	2013	2014	2015	2016
Operating Costs	$10k	$20k	$25k	$100k
Grant Funding	$100k	$250k	$100k	$50k
Private Funding	$500k	$500k	$1.5M	$2.5M
R&D Expenses	$675k	$1M	$2M	$1.5M
SGA Expenses	$40k	$75k	$200k	$450k
Revenue	$25k	$100k	$250k	$2000
Other Revenue	$10k	$25k	$50k	$250
Net Income	-$5k	-$245	$75k	$500k

- 3 SBIR/STTR grants awarded to date – $1.02M
- Seeking STEM grants NSF & foundations

Product Roadmap

Year 1	Year 2	Year 3
RasDas1+ Aud.X	2rd Gen.	3th Gen.
RasDas3+Opt.X	upgrade	
STEM Curr.	Integ.Robotics	
Instruct Engine	other languages	
dynamic curriculum delivery		

Summary

- Disruptive, technology, ultra low-cost

- Web connectivity with versatile server and client app software architecture

- Adapability to interface with most products in the Arduino & Raspberry Pi value chain

KickStarter: http://www.kickstarter.com/projects/254558907/data-acquisition-system-for-raspberry-pi; website: http://www.wattminderinstruments.com
Contact: Steve Yang, interim CEO, 408-306-5803, scyang@wattminder.com