

"How to turn a PhD into a product" Not at all a tutorial

a wiggled detour into tech business from a strictly personal perspective

Sven Ahlbäck, CEO, Co-Founder, Doremir Music Research & Professor, Kungliga Musikhögskolan, Stockholm

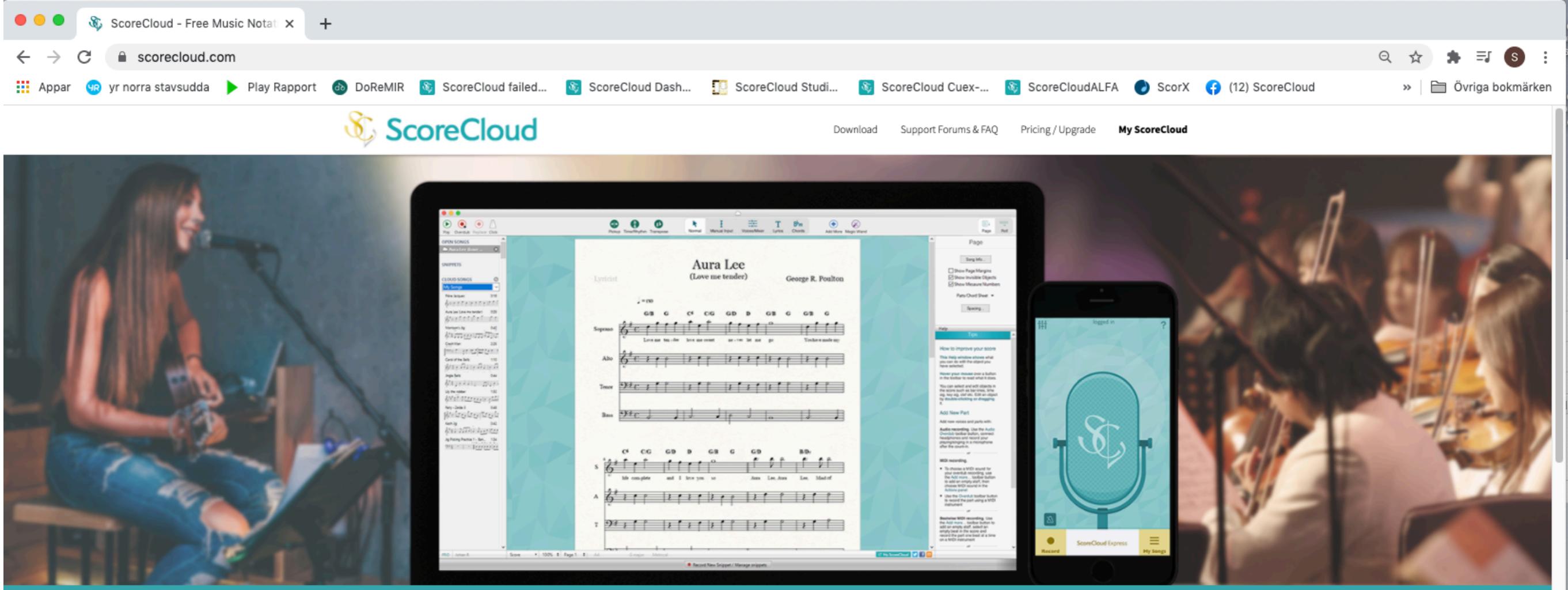
ScoreCloud - Free Music Notat x +

scorecloud.com

Appar yr norra stavsudda Play Rapport DoReMIR ScoreCloud failed... ScoreCloud Dash... ScoreCloud Studio... ScoreCloud Cuex... ScoreCloudALFA ScorX (12) ScoreCloud Övriga bokmärken

ScoreCloud

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Download now!

https://youtu.be/eJ_8vgguwow

Play your music – ScoreCloud notates!

The Most Intelligent Music Notation Software

ScoreCloud instantly turns your songs into sheet music. As simple as that!

- Instant Score from MIDI or Audio
- Arrange and Edit your Score
- Print, Export and Share

"Like Google Translate for Music"



ScoreCloud 4: Polyphonic Audio Analysis



Transcribe any polyphonic or monophonic instrument live recording into sheet music. Notating music has never been easier.

Music notation software ideal for musicians, students, teachers, choirs

Agenda

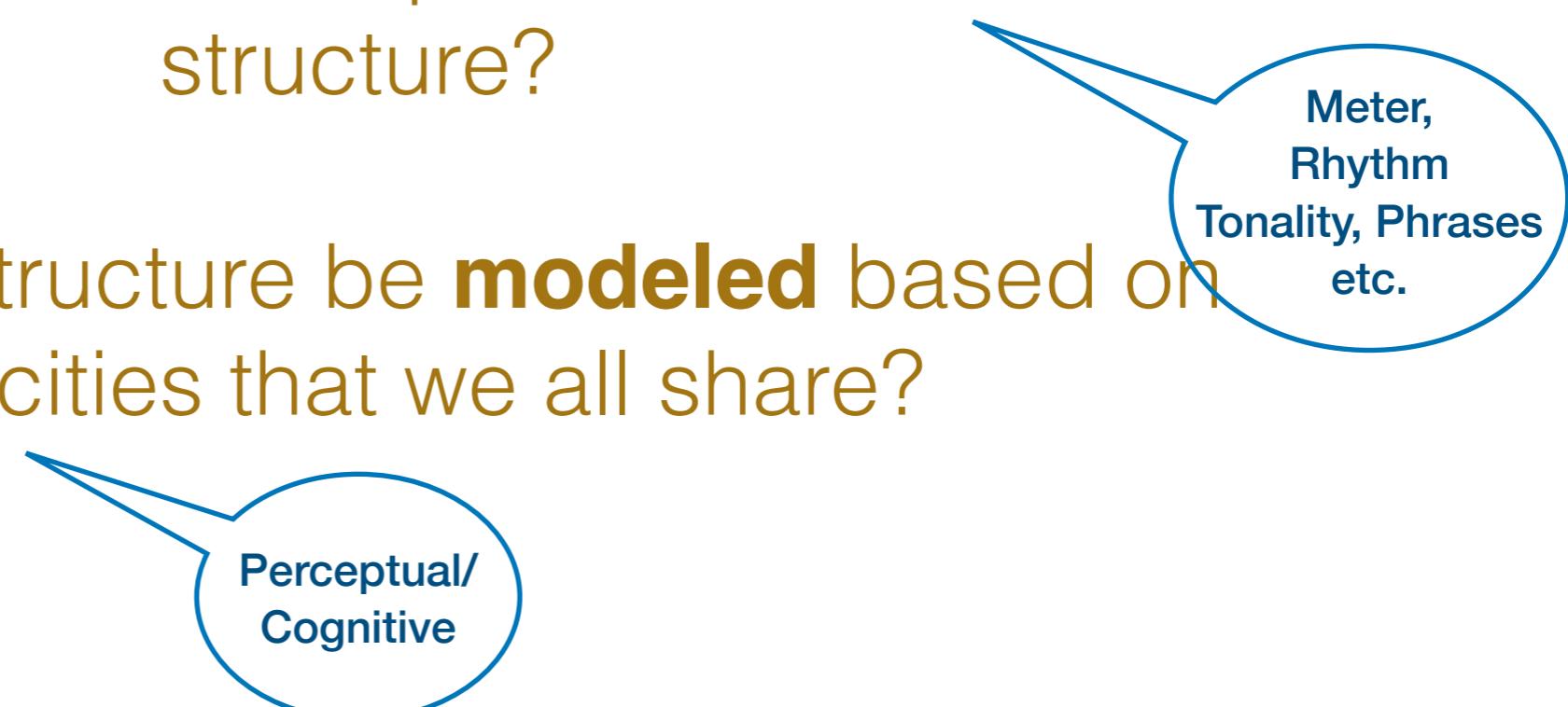
- Why PhD? - From music to research
- Why Product? - from research to business
- Let someone else license it!?
- Do it yourself - Becoming a Startup
- From Research to Business - The business plan, Vision, Team, Business Model
- Funding - Loans, Grants, Angel? investors, VCs
- From Research to Product - Industrialization, Scalability, Design, UX/UI, A/B tests ...
- User requests - Pivot - Scorecleaner - > ScoreCloud Express
- All the rest - Distribution, Marketing, Sales, Support, Finance, Board, Owners, Legal...
- Pros and Cons

Nurture your vision!

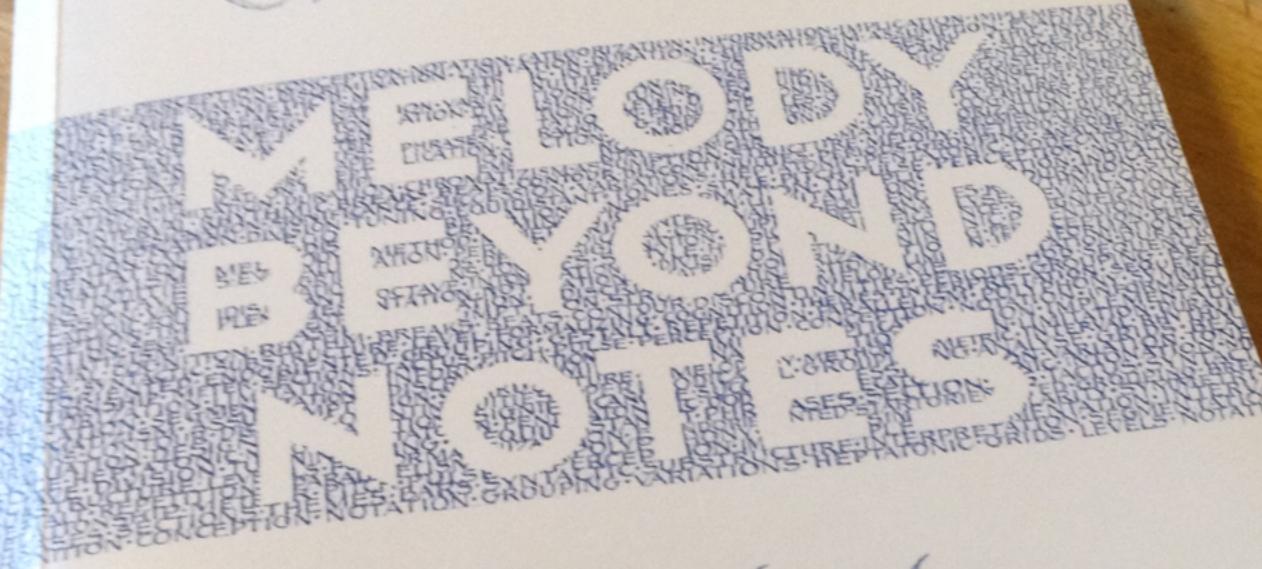
My doctoral project: From tonality in older Swedish folk music to modelling music structure:

How **similarly** do we experience basic music structure?

Can music structure be **modeled** based on capacities that we all share?



Sven Ahlbäck



A study of
melody cognition

An embryo to automatic transcription from performance MIDI input

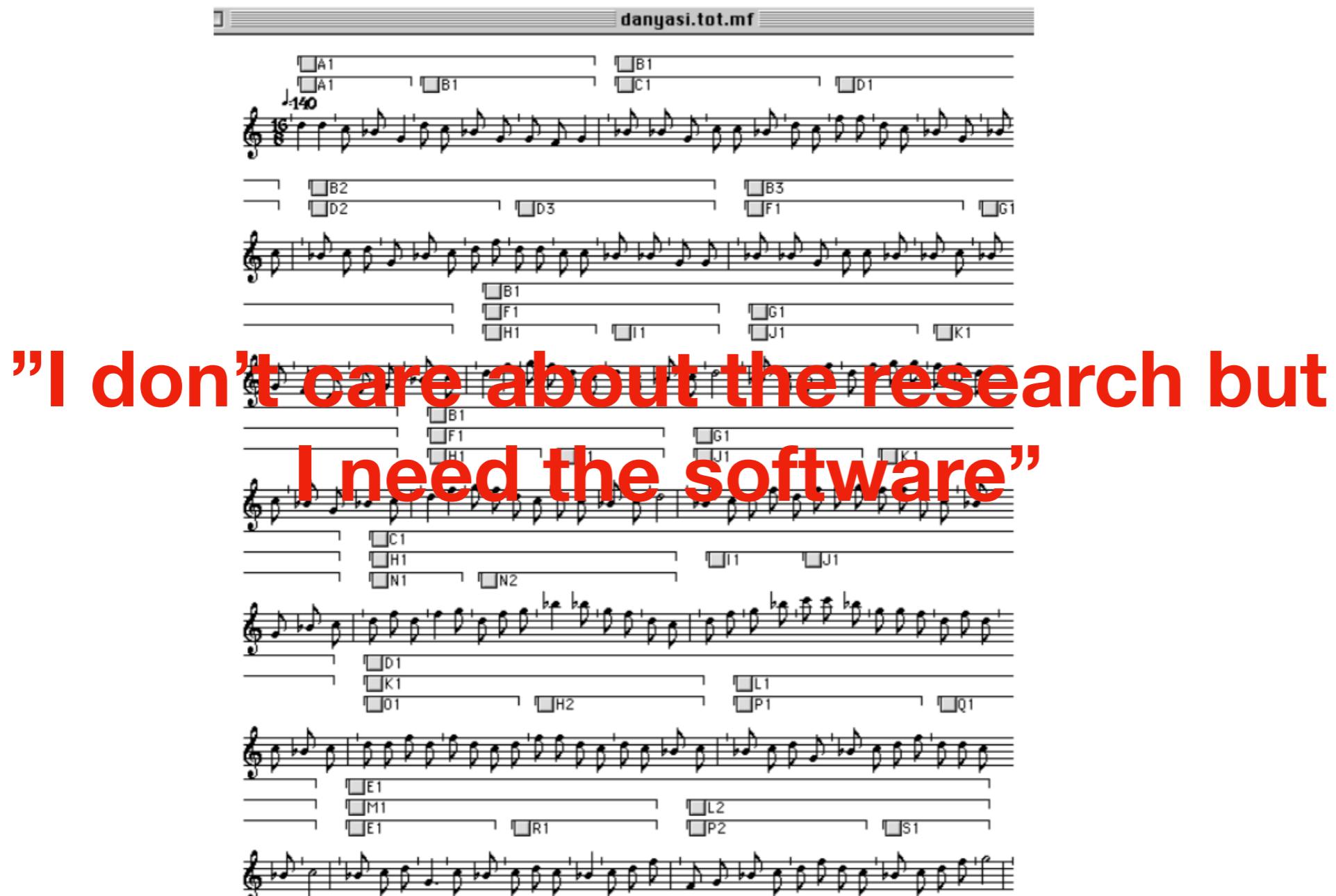
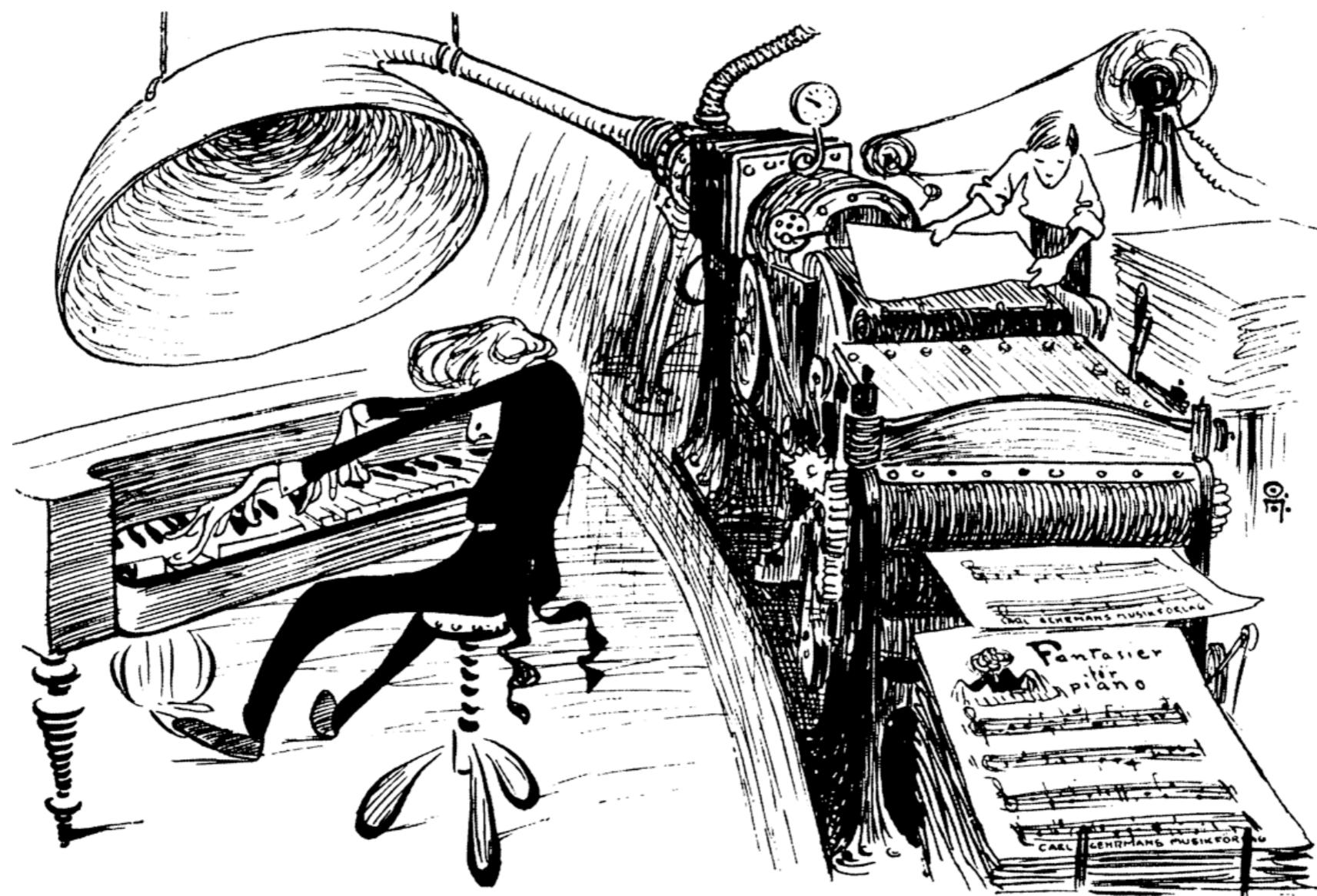


Figure 6-69. Output from computer model analysis including local phrase boundary analysis performed on Raag Sudha Danyasi



1899

Interpretation by Notation Software

Track 1

10
7
9
13
15
9
11
14
13
10
9
9

Performance
MIDI

Original Score

Andante. $\frac{4}{4}$ 1st.

Nocturne.

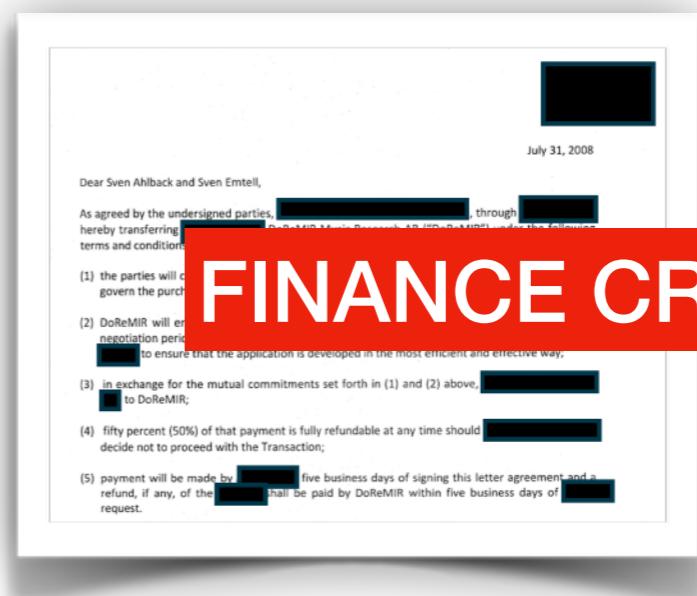
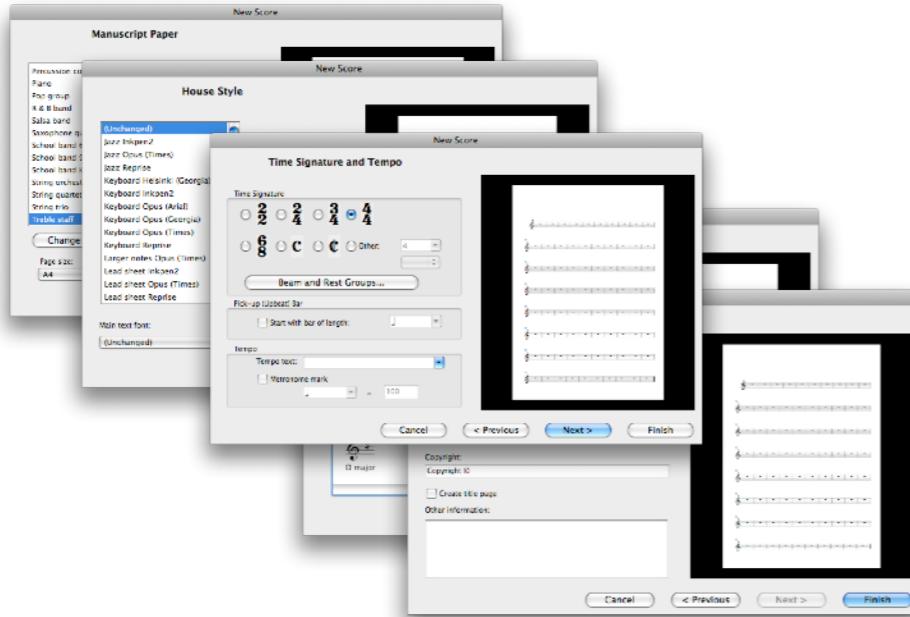


Sell it and let someone else take care of the business!

... finally a 'thick' contract...

An easy ride - no need to build a end customer business - btc

Lose control - will they hide it? will they kill it?



Make it polyphonic
- and we are interested...

and YES we did!



Now what?

Make our own product!

Becoming a StartUp - Getting help from the Business Incubator

Highly recommended!

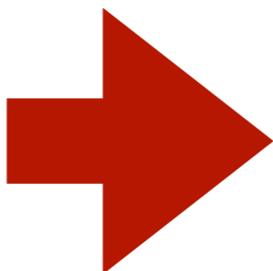
Funding

Recruiting

Office Space in a Startup hub

Business Coach

the Business Plan

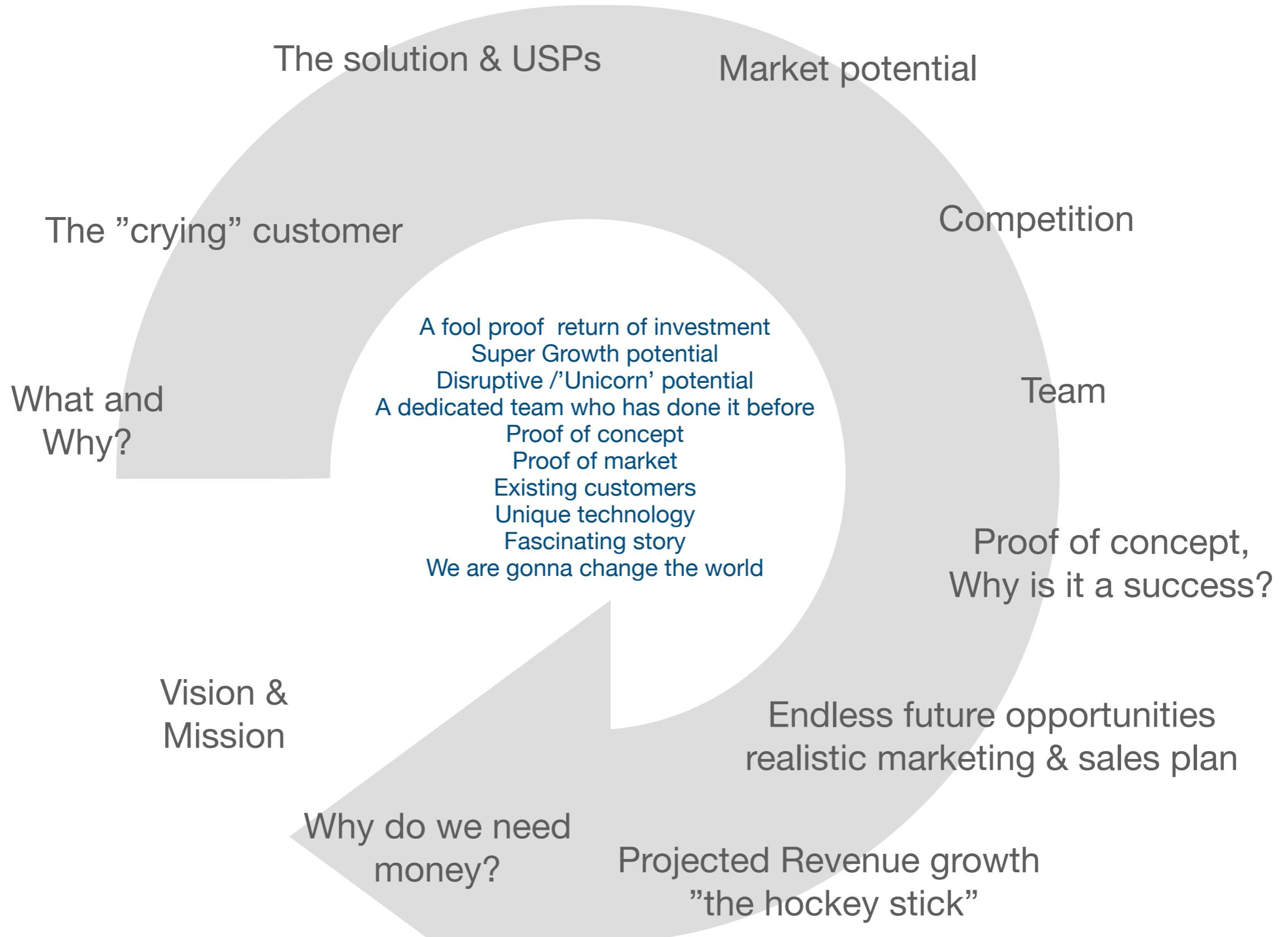


Release a product within 6 months!

and YES we did!



the Business Plan - the sacred slide show





Find your own unique Blue Ocean

Red Ocean Strategy	VS	Blue Ocean Strategy
Compete in existing market space.		Create uncontested market space.
Beat the competition.		Make the competition irrelevant .
Exploit existing demand.		Create and capture new demand.
Make the value-cost trade-off.		Break the value-cost trade-off.
Align the whole system of a firm's activities with its strategic choice of differentiation or low cost .		Align the whole system of a firm's activities in pursuit of differentiation and low cost .

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Who is your customer?

How will they learn about your product?

How are you going to make money?

Who do you need to partner with?

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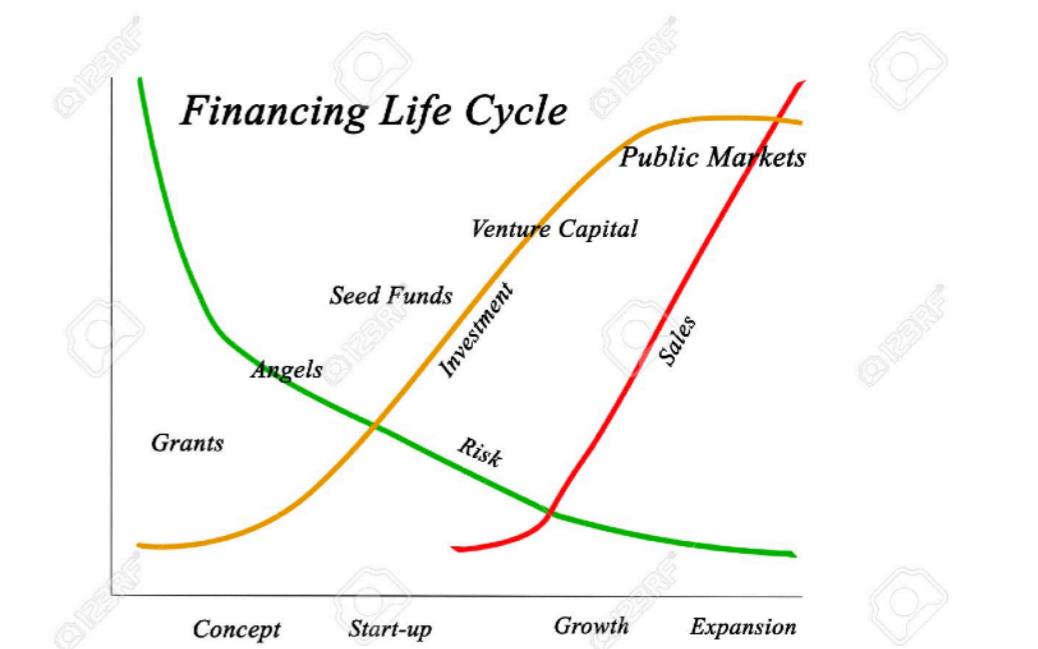
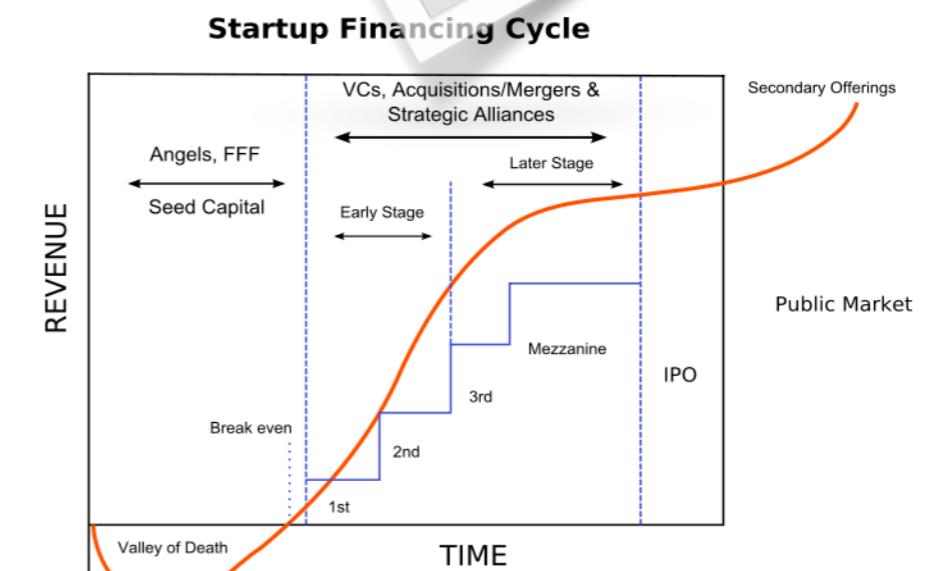
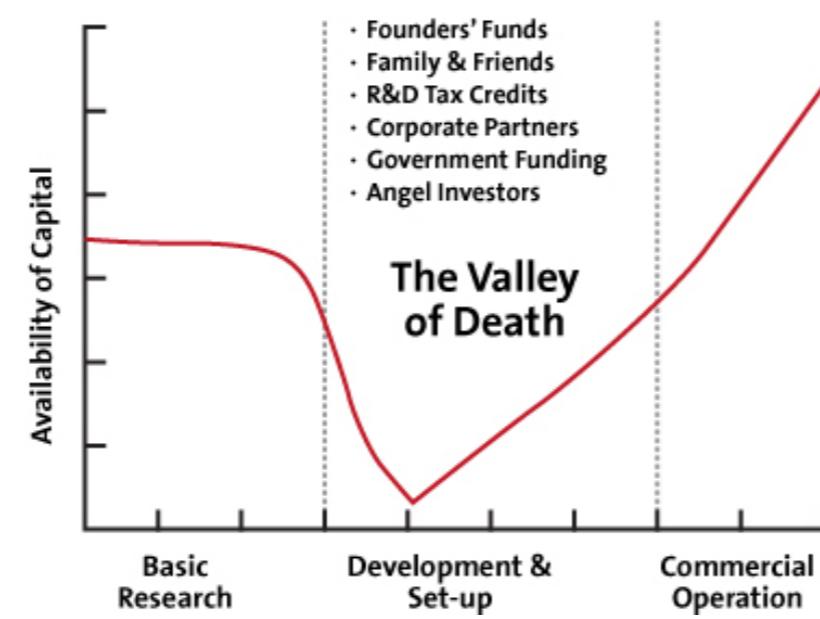
the Business Plan

Sales & Presentation training

The Business Angels,
Loans, Grants



From Angel investment to Venture Capital



Becoming a StartUp - Getting help from the Business Incubator

Highly recommended!

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the Business Plan

Sales & Presentation training

The Business Angels,
Loans, Grants

Focus group studies
& Testing

UX, UI, Distribution, Packaging

Release

Release!!!



Now what?

selling....

takes time....

and effort....

and time....

and effort....

and since I am not a salesman....

growth is slow....

Customer feedback



- Fantastic, but how can I
click in the notes one at a
time?

- When does it come for

EInux?

User feedback puts technology to the test!

- I cannot play piano, I would
be using it if I could sing!

- What is a MIDI keyboard
and how does it connect to a
computer?

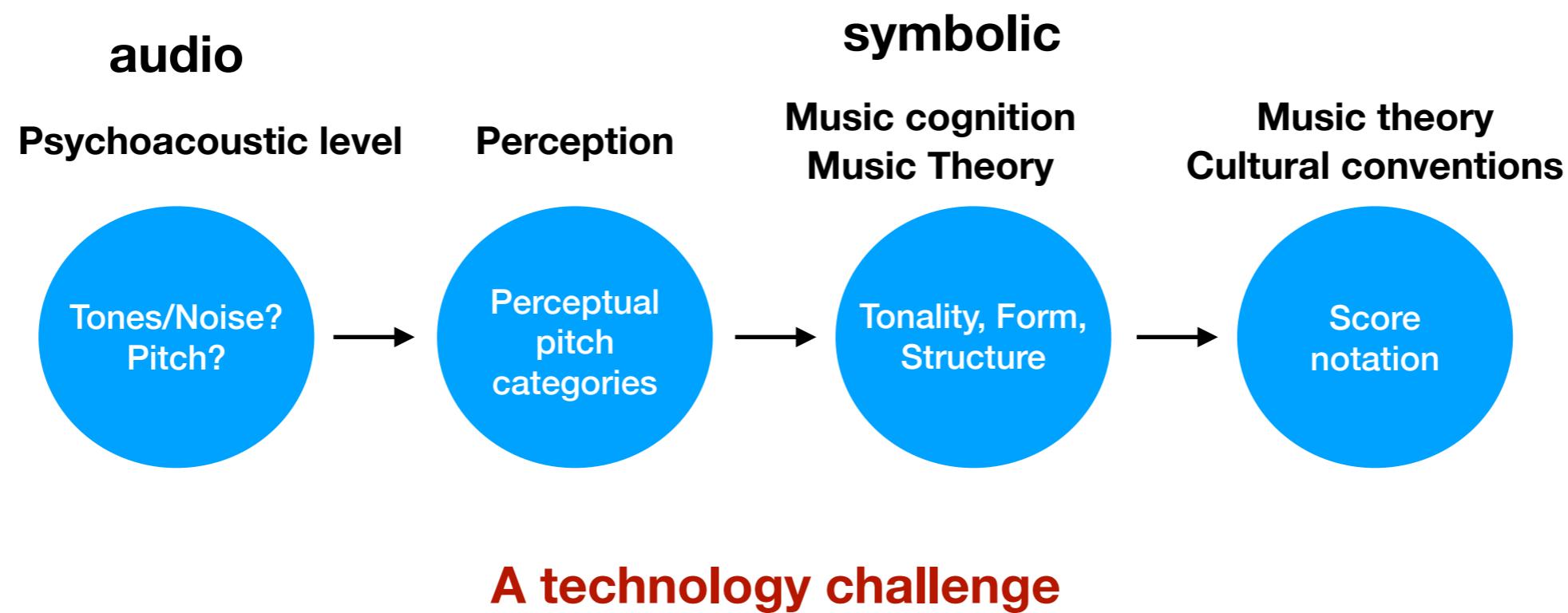
- This is true magic! This has
changed my life!

- Why can't you guarantee
that the music is in 4/4 time?

Learning, purpose and Ideas!

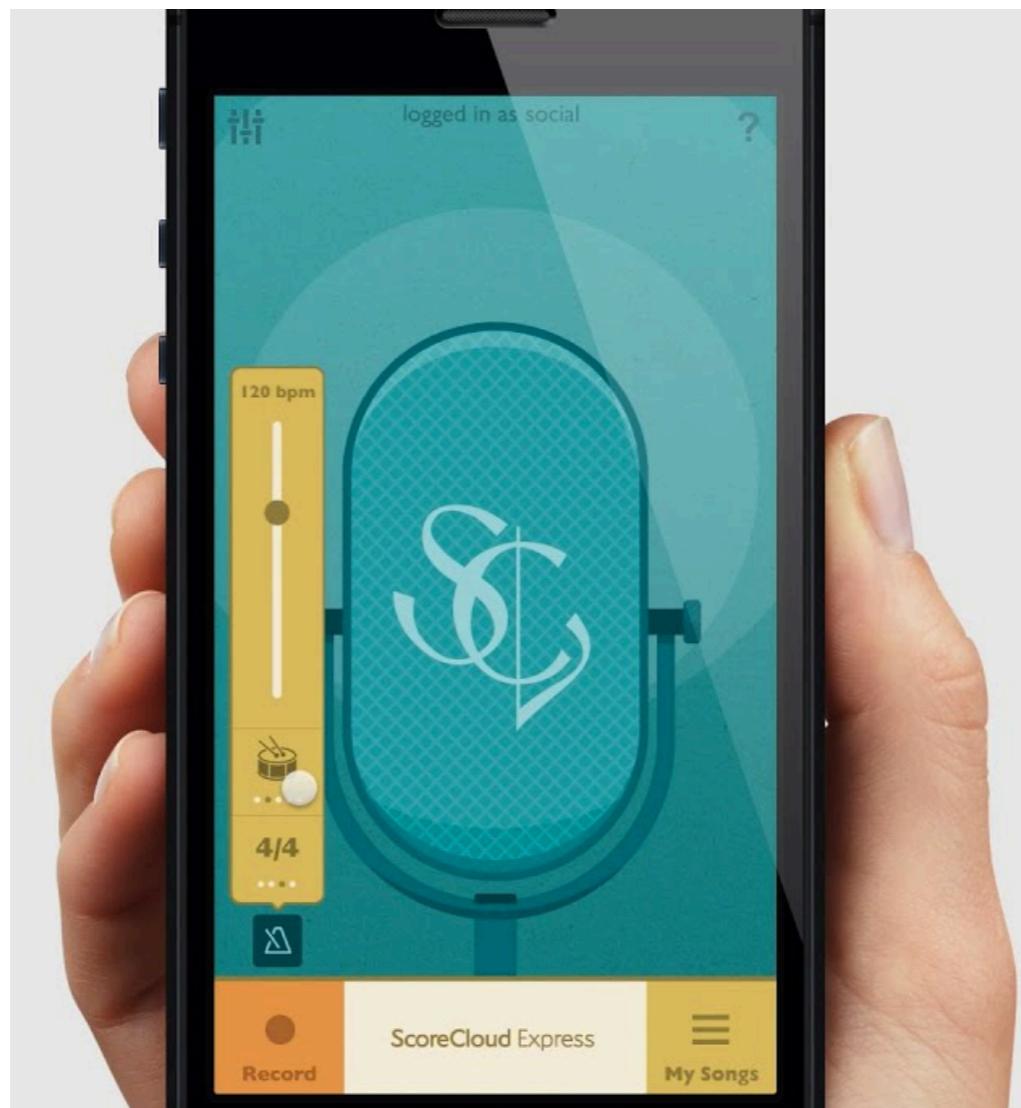
- You have released my creativity! If
you were around in Beethoven time,
he might have had time to finish his
symphony?"

User need -> A practical MIR task:
Transcribe a sung melody
into a musical score



A Design Challenge - Simple but Powerful UX and UI

How to make it easy enough for everyone to use?



Revert 'O sole mio Done

Edit Score

Title b^b ♩: 3/4 ♩ = 96

♩ = 120

F

Ma n'a - tu so - le

C

cchiù bello, oi - ne,

C7

'o so - le mi - o sta nfronte a

F F7 B^b_m

te' 'o so - le, 'o so - le

F F/D C

Play Notes Pickup Timing

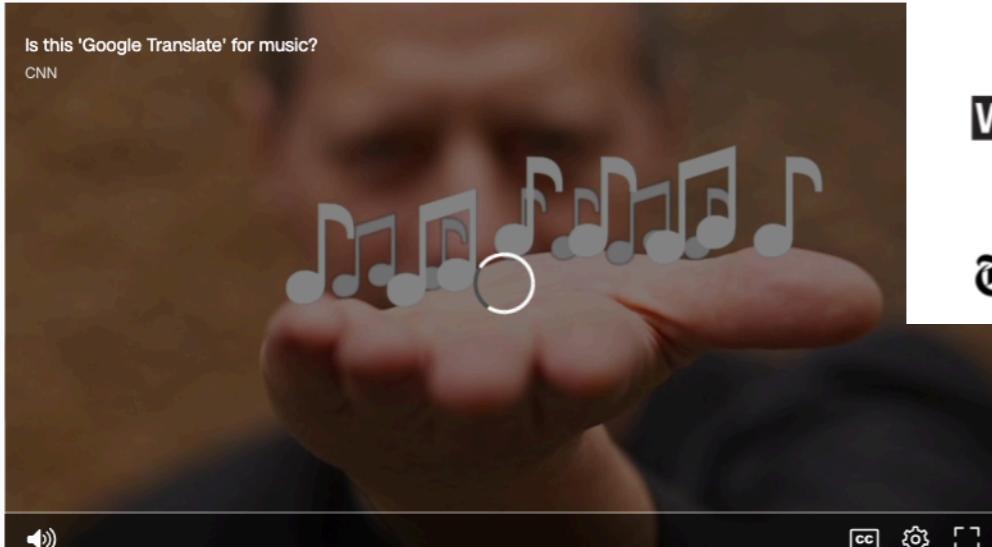
The image displays a musical score for the song 'O sole mio' in G clef, common time, key of B-flat major. The lyrics are: Ma n'a - tu so - le, cchiù bello, oi - ne, 'o so - le mi - o sta nfronte a te'. The score includes three staves of music with corresponding lyrics below each note. At the bottom, there are four buttons labeled 'Play', 'Notes', 'Pickup', and 'Timing'.

ScoreCloud

A random article goes viral... ...and the app goes global -> ≈ 1 Million Downloads in 133 countries



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Technology

App transcribes your shower singing into musical score

By OLIVIA SOLON | Published 9 May 2012



A team of music researchers has developed an app that instantly notates a tune that you sing into a mobile phone's microphone.

ScoreCleaner Notes "listens" to the melody and then writes it out as a musical score, letting you instantly share written music either through social media or email without needing to know how to read or write music. It was developed by a team at the KTH Royal Institute of Technology in Sweden.

Forbes

May 6, 2012, 09:47am EDT

New App Allows Anyone To Create Musical Scores By Humming Or Singing, No Instruments Required

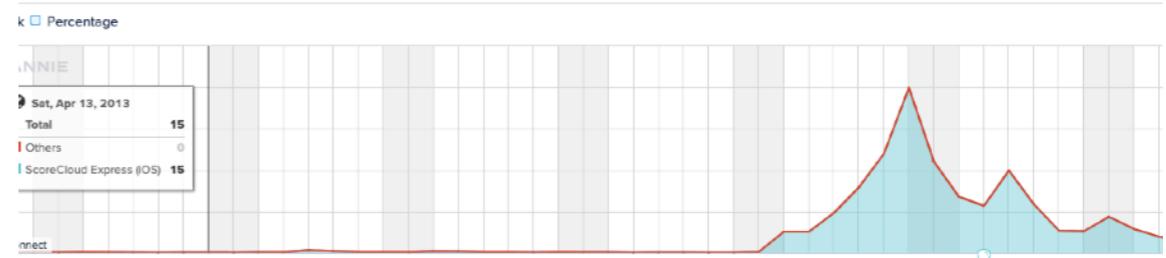
By Reuven Cohen Contributor @ Tech I focus on disruptive trends in technology and cloud computing.

This article is more than 7 years old.



What happens when a fiddle playing professor at the Swedish Royal Academy of Music and expert in music cognition and a bass playing computer engineer get together? In Sweden, the answer is a ground-breaking new music App.

Every now and again I stumble upon a new App that impresses me, I admit that lately this has become much harder to do. But recently a new App released by a researcher from KTH Royal Institute of



April: 10 per day

May: Wired Japan -> 4000 per day

ScoreCloud 4



- "Fantastic, but how can I click in the notes one at a time?"

Thanks to EU grant Horizon 2020 SME instrument
Polyphonic Audio to Score Transcription



- Become inspired by users and face their music!
- [Sometimes] it feels like you are contributing
- Leave out the Academic quarreling, career building and greed
- Concentrate on results and don't get stuck with formalia
- Be your own boss

Research

Business?

Collaborate!
Brilliant technology does not make a product!

- You need to make money to survive and you need to work on that
- There is so much else in business than developing technology and research - and it is not always fun
- You never know if your business is around six months from now
- You have to please business devils, investors and your customers
- Where are the students and why can't I publish?