



Hello, good afternoon – I’m excited to be here, to talk about music on the blockchain! About three years ago I heard the word “blockchain” and it pretty much changed my life, along with having a baby at the same time. It made me rethink in my mind how I would rather do business in the music industry, having been in it for 20 years before that point, and being frustrated for many reasons, but also encouraged for many other reasons, because there are lots of good people working in this industry.

I’m going to talk about this thing called Mycelia, which is the vision of a future music ecosystem based around songs and a creative database, inspired by blockchain technology, and how it made rethink to do things in a more sustainable way and a flourishing way, hopefully. So, here we go. *This* is like a Play button, it’s like an augmented Play button, because I feel like blockchain is augmenting organisations, companies, rethinking things, rather than... A lot of people use the word “disruption”, and that scares the music industry; I think “augmentation” is nicer. It’s like an augmented Play button, and this would be able to tell you that when you heard a song, maybe you might be able to know who wrote all the words, whether they’re being paid fairly, or maybe where some of the proceeds might be going, like going to a disaster relief fund, because you could do that.

DATA ON DSPs



IMOGEN HEAP
TINY HUMAN

Artist:	Imogen Heap
Song:	Tiny Human
Album:	N/A
Release:	17 October 2016
Time:	4'21"

[illegible]

But, here's all the information I would love to share – look at all this lovely data! Nobody gets to see any of this, and these, I think, is what's going to enable the flourishing of the music industry, having access to this data to enable services to think imaginatively and build services that people would like.

LYRICS/ COMPOSITION

Written and composed by **Imogen Heap**
Published by **Megaphonic**

Oh my tiny human
At 05:08 you break me apart again
The space-time continuum
Buckles and bends around your every twist and turn
I can barely remember life before You came crashing in on one day Crazy beautiful you
Blind me like the dawn
After ashes fell on Pompeii Crazy beautiful you
A miracle, a mystery
And one short stop away
From joy to misery
When the night becomes day
I give you my every last ounce
You make a pin-cushion out of me
And you can thank me later, babe (if I'm alive)
How long can one live without sleep? Still I can't stand to imagine
Life without...
You came crashing in on one day Crazy beautiful you
Blind me like the dawn
After ashes fell on Pompeii
Crazy bright beautiful you
Suddenly propelled,
So many light years from bliss
And completely unprepared,
How can anyone deserve this?
I've tried, I've tried all the tricks in the book, I'm at my wits end, Now look here what do
you want from me?
I can barely remember life before... You came crashing in on one day Crazy beautiful you
From the ashes of Pompeii
To fireworks and champagne Crazy beautiful you
You little devil, you
Oh I love you so much
It's the hardest thing I've ever done But you're so worth it
Yes you are
Yes you are
You little devil, you

DING

It's just simply having the right lyrics attached to a song. There's nowhere that you can find verified lyrics in one place; sometimes songs are written by 10 people, and nobody gets to know who they are.

RECORDING CREDITS

Arranged, performed, produced and mixed by
Imogen Heap
Record Label **Megaphonic Records**

Imogen Heap – Vocals, programming, synths
Stephanie Appelhans - Violin
Diego Romano - Violin
Yasin Gündisch - Viola
Hoang Nguyen - Violoncello
Simon Minshall - Trombone, Bass Trombone,
David Horwich - French Horn
Florence "Scout" Heap-Lebor - Percussion

Assistant engineer - Alexis Michallek
Studio Manager - Alexis Michallek
Recorded at The Hideaway, London
Mastering - Simon Heyworth
Mastering assistant – Andy Miles
String players appear courtesy of the Junge
Deutsche Philharmonie

It's the hardest

Recording credits, relatively simple ones: there's me, I recorded it at my studio, and these people came in to play instruments for me. I used the same mastering engineer that I've used for 10 years, except nobody knows because they don't get see any of the credits, and my studio manager who is like my right-hand man.

GEAR USED

Software Instruments and DAW :
Avid Pro-Tools HD + Reaper Rewire
Plugins from Waves Gold Bundle and Focusrite D2/D3
EastWest - Orchestra Gold
Box Of tricks by Sonic Couture : Vocal Choir, Boomwhackers,
Glockenspiel

Instruments/ sounds:
Teenage Engineering OP1
Ameda Elite Breast Pump
Scout's Rattles, Rustling cubes and Heimes Baby Gym

Strings and Brass :
Microphones: Neumann TLM 103 - Sennheiser MK800
Pre-amps: Avalon Vt-737SP - Avalon AD2022

Vocals :
Microphone: Neuman TLM 103
Pre-amp: Avalon Vt-737SP

PI

The gear that I used... Anytime anybody finds out what kind of gear I used, any one of these brands find out, they send me more gear, which is great. It's really, really useful to get more sponsorship and develop collaborations that make sense in terms of branding and things.

103
7SP

PLAYLIST DATA

Time signature
3/4

Swing
26%

Key
F# Major

Tempo
156

Tags
#motherhood #colic #sleepless_nights
#anxiety #new_born_baby

Playlist data: just simply putting the key, the tempo, and things that aren't like like pop, rock, reggae, but maybe things like motherhood, colic, sleepless nights, anxiety, newborn baby.

INSPIRATION/ HISTORY

Sennheiser campaign

<http://www.sennheiser-reshapingexcellence.com/en>
<http://en-uk.sennheiser.com/news-reshaping-excellence-sennheiser-teases-the-next-milestone-in-high-end-audio-at-exclusive-london-event>

Blog "The Making of Tiny Human"

<http://imogenheap.com/home.php?article=2417>

The inspiration, why I wrote the song in the first place: it was commissioned by Sennheiser, but it was entirely about my newborn baby, how I wrote the song, etc.

ADDITIONAL MEDIA

Official Video

Tiny Human - Youtube

Live Performances

Imogen Heap & Zoe Keating

Imogen Heap - Keytar, Box Of tricks (sonic couture), Apple Laptop, MiMu Gloves, Sennheiser Microphone/In-ear monitoring, Ableton Live DAW.

Zoe Keating - Live cello and looping, Ableton DAW, SooperLooper.

Press

<https://www.theguardian.com/membership/2015/oct/02/live-stream-imogen-heap-releases-tiny-human-using-blockchain-technology>

Related Audio

Tiny Human - Instrumental
Scout Play recording

Related Videos

Breast Pump Machine Video

Stems

Brass
Bass
Drums
Strings
Synths
Tuned Percussion
Vocals

With that

Incidentally, this woman *here*, Zoe Keating, she's where I first heard the word "blockchain". She is a musician, a very dear friend, just about to go to the Blockchain Summit on Necker Island as an "entertainer". A very bright woman, and is kind of charging ahead in the US as well, doing great things there. Related audio, related video support, and then stems, so if anybody wants to remix, they can have all the stems.



VIDEO CREDITS

Directed by Imogen Heap and Michael Lebor

Video concept - Imogen Heap

Cinematography – Michael Lebor

Choreography - Steven Hoggett

Set Build - Jason Wapling

Set design – Jason Wapling,
Michael Lebor, Imogen Heap,

Production assistant – Alexis Michallek

Location - The HAB lab, London.
With thanks to Focus 24 for the lighting

AL

Then there's things like video credits... And none of this information is anywhere online, but every single song has all this data. Who choreographed the video, who's the cinematographer, etc.



ARTWORK CREDITS

Front Cover Subject - Imogen Heap

Front Cover Concept - Imogen Heap

Sleeve design – Andy Carne

Streemliner - Andy Carne

Photography – Michael Lebor

Image Selection from Music Video - Karen Carne

Tags

#Chair #Shower #ImogenHeap
#BlackBackground #WetClothes

THANKS

Scout Heap-Lebor, Michael Lebor, Alexis Michallek, Mum, Dad, sis and bro, Phil Cummings, Tim Shettatt, Uwe and all at Sennheiser, Ash Dorey, Jason Wapling, Jill Lebor, Giles, Kate, Jamie Bartlett, Paul Pacifico and all at the FAC, Vinay Gupta (and the Ethereum gang), Phil Barry and Russell Verbeeten (Ujo), Rupert Hine and Alan Graham (OCL), Chris Ellis Francesco Canessa (protip.is), Joe Lubin, Zoe Keating, Jennie Fagerstrom, Karen Carne, Andy Carne, Michael Harris (and all at the guardian), Tom Panton (and all at Sonos Studio London), Simon Heyworth and Andy Miles from SuperAudioMastering.com, Chris Vatalaro, Kumar Kamalagharan, Mike Benson, Pod Blumen.



Artwork credits, thanks... All these people, and all of the names of these people have other worlds around them, and if we could knit these together, we could create something quite extraordinary.

ALL USAGE RIGHTS

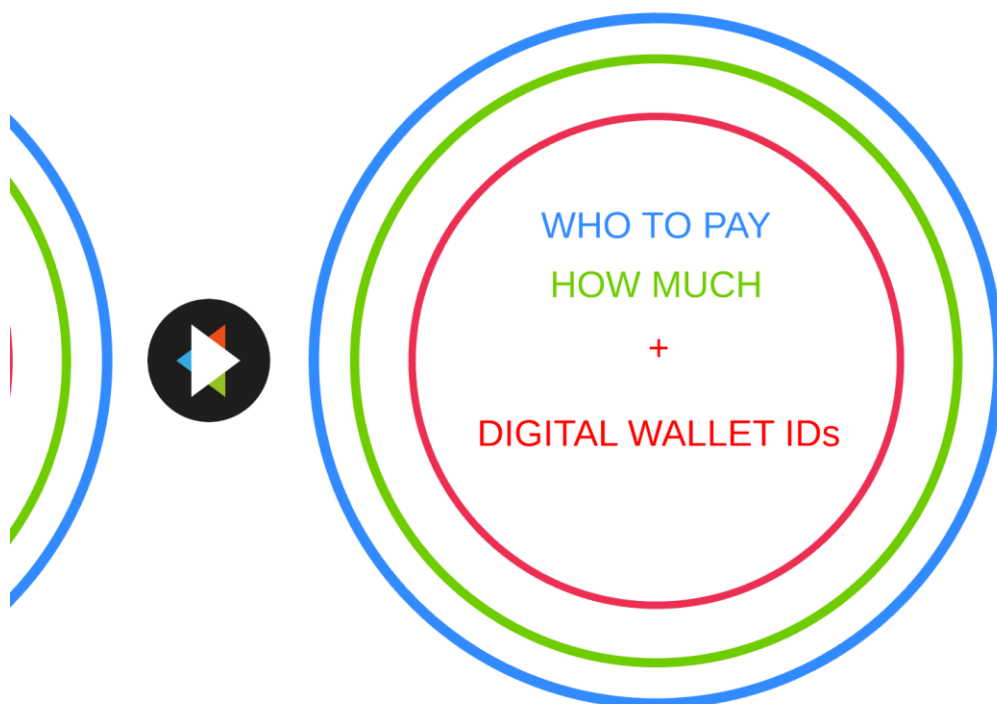
Fans, Services, Brands,
Synchs, UGC, Performance,
Remix, Covers

Contact Info & Licenses

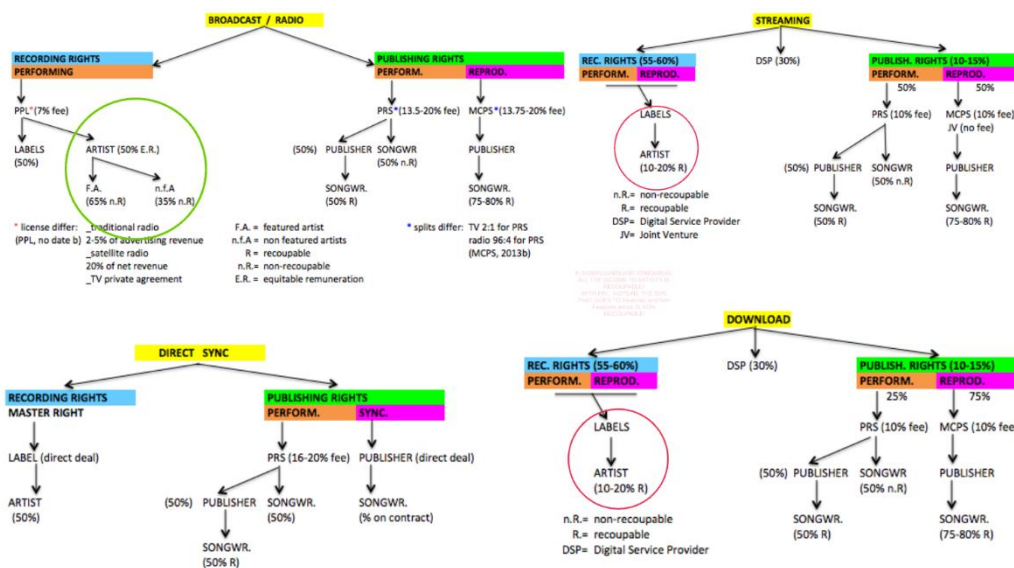


All usage rights. It's so frustrating to have a record out there and get endless emails about "Can I put thing into my wedding video? Can I remix this?" or "I have remixed it, I sampled it," and then trying to backtrack and figure out percentages and all that stuff later. And just contact info and license data.

What would fans do, what could services do with this data, what can brands do with this data, what can people who want to use it in a film... What can fans do if they want to put up some user-generated content? Because at the moment it's really, really difficult to do business with songs. There's no database of songs to show you how to do things, so people just do things because they want to do things, and they haven't got time and money to go and find out how to get permission to use the thing, so they just use it. Most times people just use it and they don't tell us, because they're afraid that we might say no, but actually 99.999% of the time I say yes, because I want people to make other babies with my music, collaborate and do remixes and whatever.



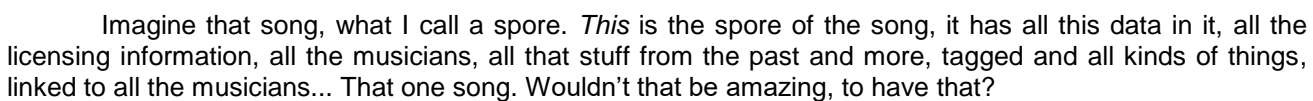
And in this I want to be able to say who to pay, so how much is that violinist going to get, how much might that engineer get, the producer, however you want to divide it up, and what their digital wallet ID is. About two and a half years ago the first song that was generating smart contracts was Tiny Human, it was an experiment and Vinay introduced me to the game, and I put up an experiment: here's all this data, do what you like with it, and an organisation called Ujo Music, which made it the first song to distribute using smart contracts. At the time it was like £120 worth of downloads, because nobody really had an inkling at the time that it was a month into launch, but now it's going £30,000 – hurray! So all those people who were like, “Ha-ha, she's trying to change the music industry and she didn't even sell 200 copies...” that was the point where it was, “Look, it is possible – let's think about the future.”



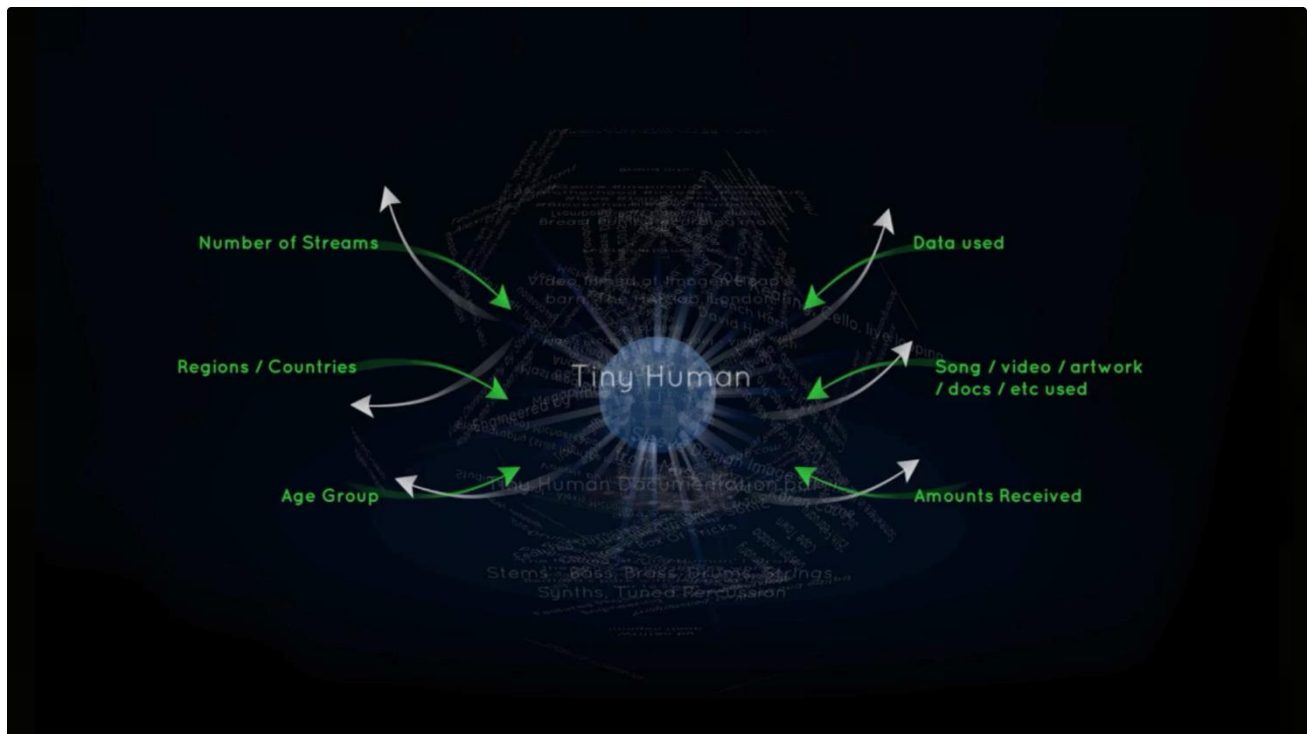
Because at the moment *this* is the situation, how you receive money, and it can sometimes take 2-3 years for the money to come, especially if it's international money, you've got all these people in the middle. Say you're a streaming company and you have to send, this is just in the UK, so if you're a streaming company, to send your money... First of all, you send all the songs to the performing rights society, then the performing rights society goes, "Okay, those are our songs, we'd like you to give us money on those songs, please," and then they go, "Okay," and then they pay money, so it happens three times, there's no central place to just acknowledge who owns what and who has the permissions to do what, and this is just in the UK. So each streaming company has to literally pay 200 organisations for one artist around the world. That's crazy. Why don't we just have one connected database?

**IN DOWNLOADS AND STREAMING,
ALL THE INCOME TO ARTISTS IS
RECOUPABLE!
WITH PPL, INSTEAD, THE 50%
THAT GOES TO Featured and Non
Featured artists IS NON
RECOUPABLE**

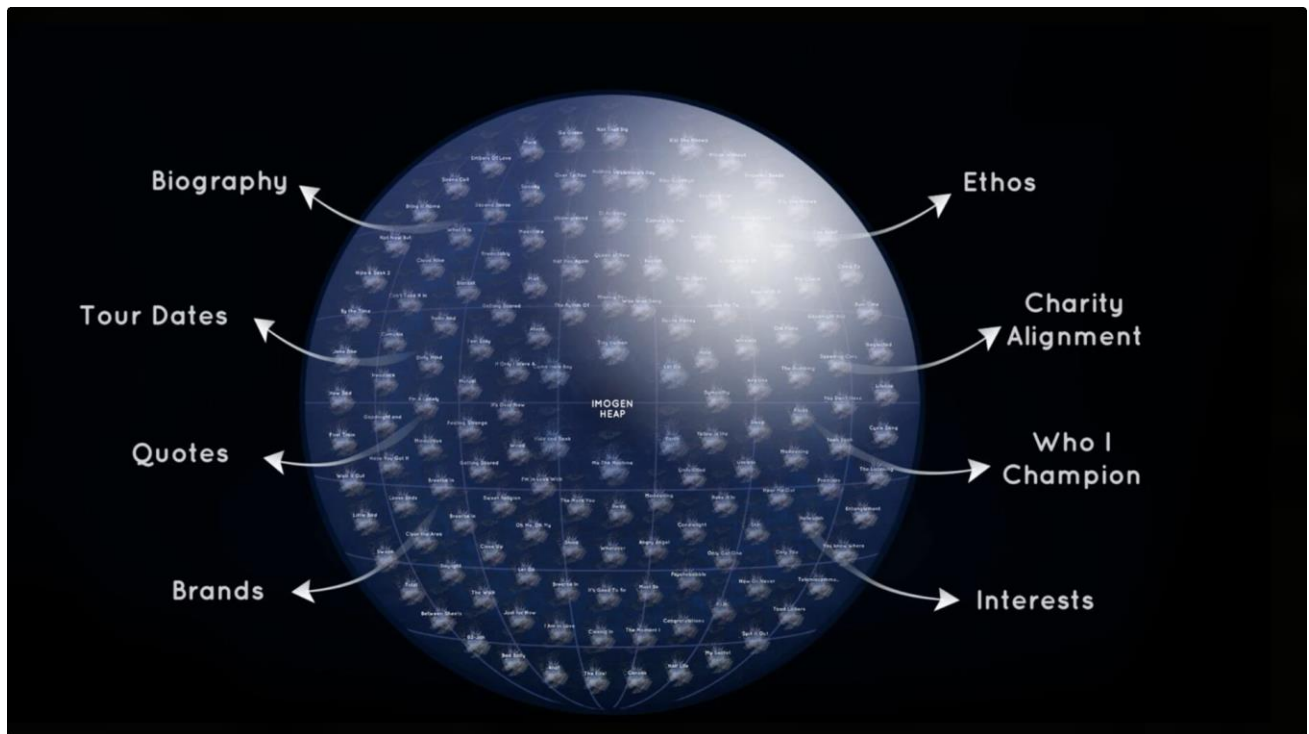
There we go, there's all kinds of other things that I'd like to change in the process, but I won't go into that because that's too long.



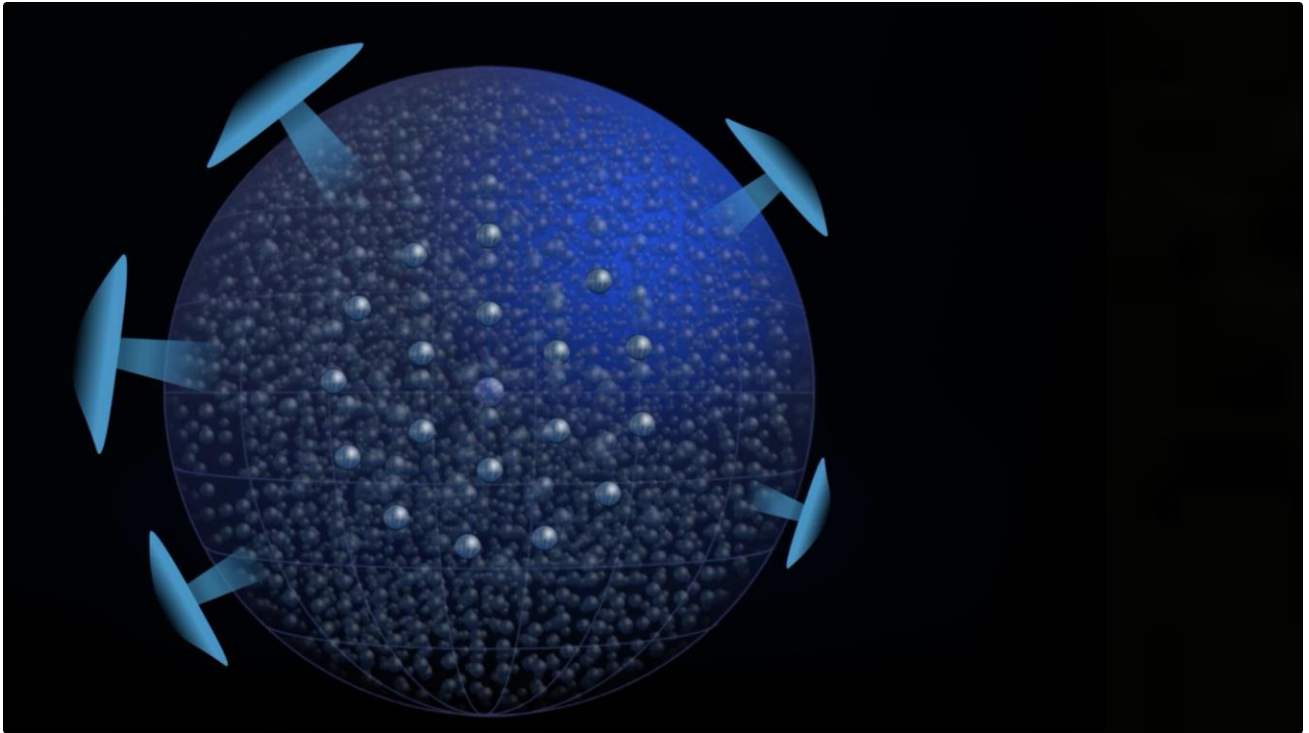
Imagine that song, what I call a spore. *This* is the spore of the song, it has all this data in it, all the licensing information, all the musicians, all that stuff from the past and more, tagged and all kinds of things, linked to all the musicians... That one song. Wouldn't that be amazing, to have that?



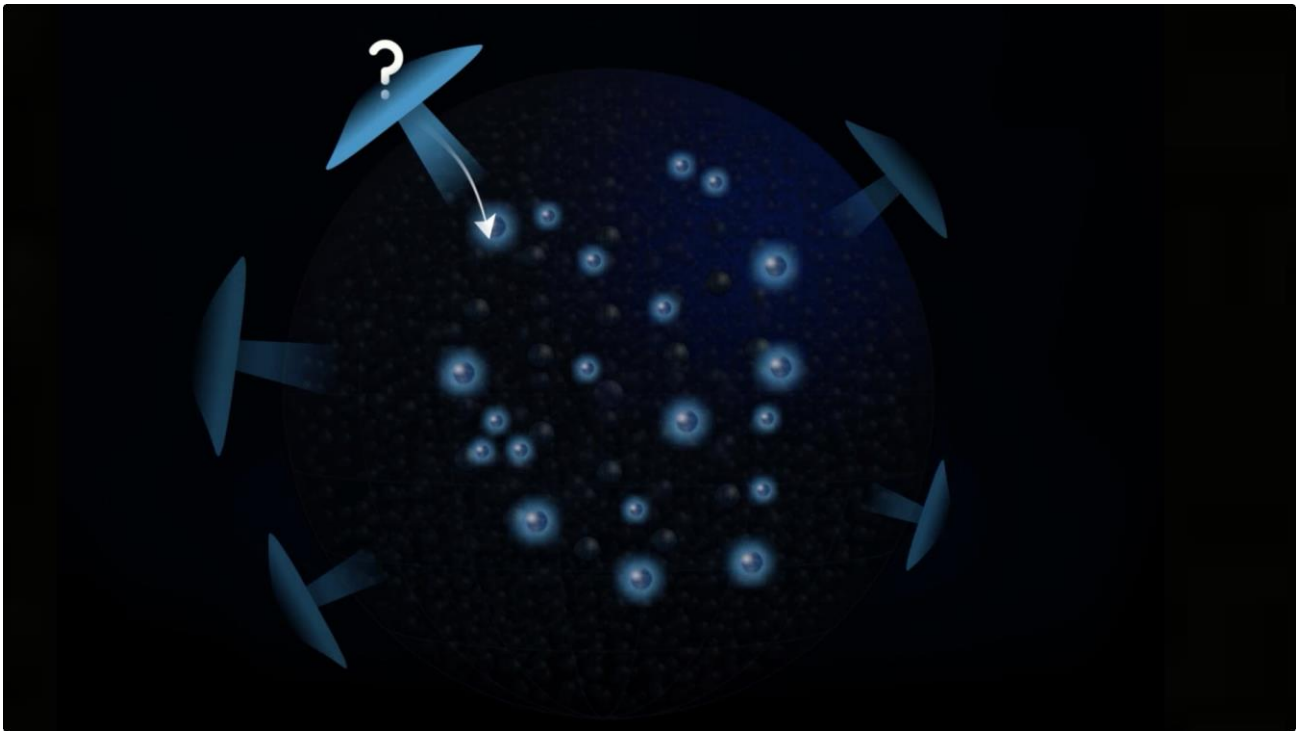
Then think about how, as an artist, somebody might want to be able to interact with that. I would like to have things like number of streams, maybe the regions or countries they're in, and roughly the age group could be useful, to help... I mean, services get this data anyway, so if they could pass that on... The data used, did they like the song, how much was received... Then you can really start to know where and how to... what to invest in in the future as an artist, as an entrepreneur. Because at the moment nobody will touch you if they want to invest in you, because all of the intermediaries make it very, very hard for an artist to know where in the world your song is played, how many times it was played who your champions are... You don't know that. So if you want to invest outside of the music industry, you don't put any money in, because you don't know whether the money is going to come back. But when you clean up the value chain, then fans could become your investors or patrons. It really starts to ease up the labels too, because at the moment they are the only ones so they have to pay these large amounts of money upfront.



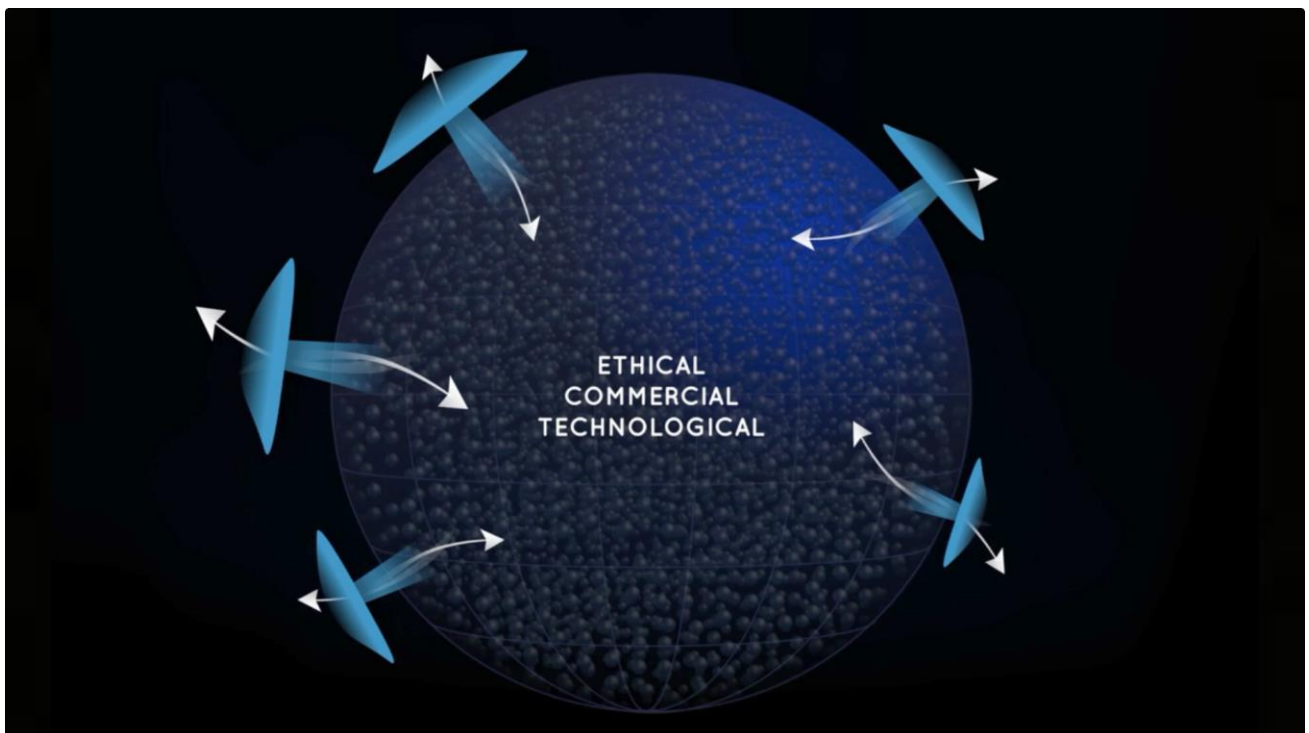
Now imagine all of my songs, there's maybe 150 of them, and then attached to that what I call the Creative Passport. Anytime I my work or my name is mentioned in a song, it can link you back to what I call the Creative Passport. This is the creator's database, and in here is my biography, my tour dates, my quotes, the brands that I work with, the ethos, charity alignment, all that kind of stuff, what musicians actually inspire me rather than what iTunes thinks inspires me, what are my interests... All this data could be really useful for a brand wanting to find an artist to do some work for, or somebody wanting to put together a festival with artists who are like-minded or share the same team.



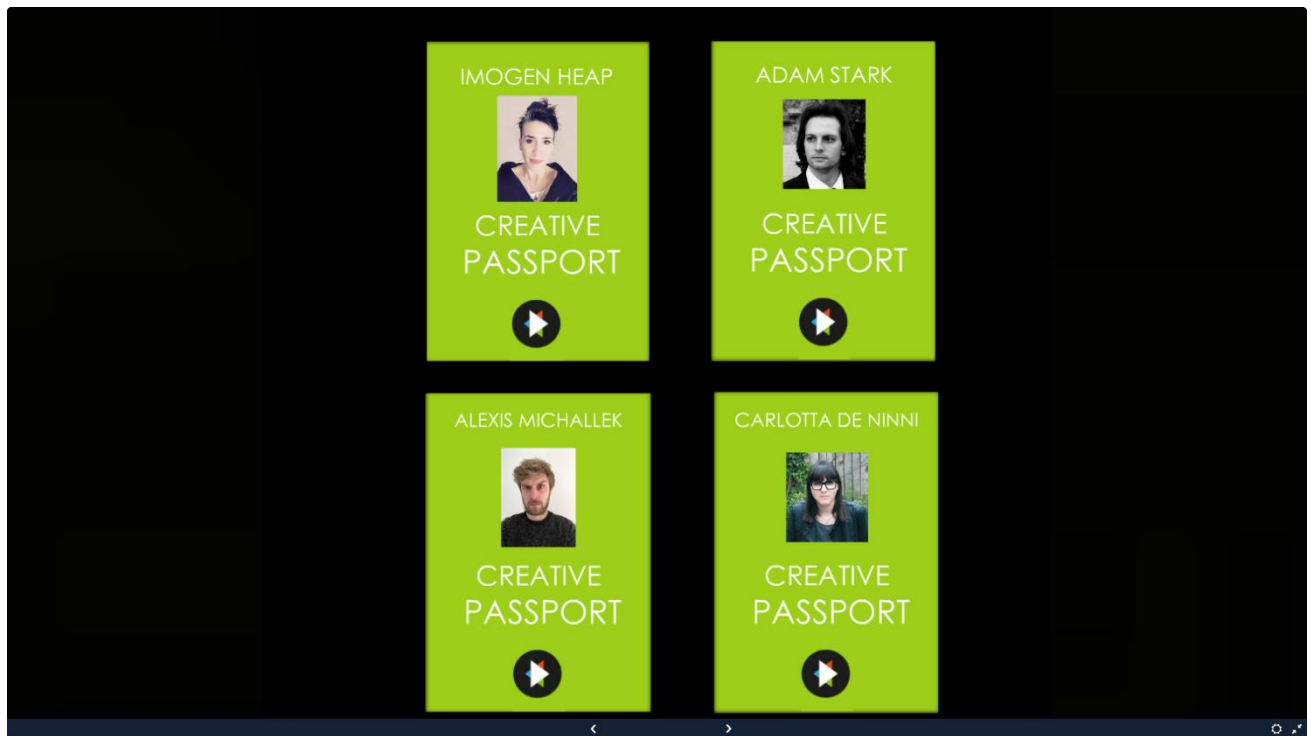
So now imagine all of the artists on the planet and all of the songs on the planet... *This* is what I call mycelia, this is like the connective tissue for what's above ground, which are the services, like the iTunes and the labels and all those people: these are the services, these are the mushrooms or the trees, bear with me, and then underground is the mycelium. Because actually in the real world, the largest organism on the planet are called mycelium, they stretch 10-20 kilometres wide, and they're what are beneath the canopies of trees of the rainforest, they're the tissue that connects them together, they share data. I think that's a great metaphor for what the music industry could be: healthy, sustainable, flourishing ecosystems sharing data to the industry above the ground.



I've kind of given you an idea, but one of them would be a brand wanting to find the next Corona advert, so they might discover that X band or X artist over there and this person over here, who maybe you've never heard of and they might have never released anything that we've heard, but you can search this database and maybe you would pay a service... It's like a business-to-business: the business would pay the Creative Passport's service to search through this database, to give somebody who wants to find a new song or a new artist for their brand and then search this database, and that database would then pay five tokens perhaps to the artist who generated the data that they've used, so it comes back into the ecosystem rather than stays in the services.



How do we get that ethical, commercial, technical standards... I was trying to think maybe we could get the industry behind this, and then I realised that was an impossibility.



So we came up with this concept of Creative Passports, because that's what we could do, that's the bit that the artists could do, we could generate the data that currently doesn't exist. When, and I know it's going to happen, when an open global music database does emerge from the ashes, then we can link into it and we can author into that too via our Creative Passports, and connect to the existing organisation, enabling us to work with legacy works, but also enable us to bring in other revenue outside of just streaming.

BIO

Self-produced, independent, engaged, Imogen Heap blurs the boundaries between pure art form and creative entrepreneurship. Writing and producing 4 solo albums and another as one half of [Frou Frou](#) (with Guy Sigsworth), Heap has developed a strong collaboration with her loyal following both on and offline in [recognised](#), pioneering ways.

Her graceful tunes such as signature track Hide & Seek populate movies and TV shows, accompany dance and theatre performances. A respected 'artist's artist', Heap's penned songs with Taylor Swift, Mika, Nitin Sawhney, IAMX, Jeff Beck, Josh Groban and Deadmau5 among others.

Heap's been nominated for 5 Grammys, winning one for engineering and another for her Taylor Swift contribution on the album 1989. In her self built home studio also sits an Ivor [Novello](#) award, The Artist and Manager Pioneer award and an honorary Doctorate of Technology. Imogen is an ambassador for the PRS foundation and for Drake Music [Organisation](#) (leaders in music, disability and technology)

At TED Global 2011, Imogen first publicly performed with her [Mimu](#), Gloves - cutting edge gestural music ware, developed for her studio and stage work along with a team of engineers and scientists. The project has attracted worldwide attention from artists to Universities and within the press for [humanising](#) music tech in performance.

Becoming a mother in 2014, combined with being free of labels and management for the first time in her 20 year career, she released her song Tiny Human, as an experiment for Mycelia : her vision for a sustainable music industry ecosystem. Wishing to explore potentials for new business models in light of distributed ledger technology and smart contracts, Heap released the song complete with a rich set of metadata to empower services to think differently and invite them to collaborate with her for further development of their services. From her first thoughts in Forbes to appearing at the WEF, Davos this year, Mycelia continues to inspire.

Recently, Imogen has written and produced the entire score for Harry Potter and the Cursed Child which has set new standards in Theatre and got her an Olivier award nomination for Outstanding Achievement in Music. In April, her latest song 'Magic Me', (commissioned by Dolby to showcase their groundbreaking Atmos system in Cinemas around the world) features in the animated short "Escape" (Moonbot studios) and was released and premiered at Tribeca Film Festival, as it was one of the nine films selected from over 4k entries

CONTACTS

PRESS PICTURES



There we go, Creative Passport: there's my biography, contacts and press images, all the ids of all the organisations, so you'd literally be able to connect up to that, you would see them highlighted on my Creative Passport so it's good promotion for them too. If you're a new artist, you might go to my Creative Passport and go, "I wonder what Imogen Heap does with her database?" and then you would see all this data, and you'd be able to tick the boxes that I ticked and have a similar service.

BIO	CONTACTS	PRESS PICTURES	
<p>PRS</p> <p>ASCAP</p> <p>PPL</p> <p>Sony UK</p> <p>Sony USA</p> <p>Downtown</p> <p>Imagem</p> <p>Warner Chappell</p> <p>Rights Agency</p> <p>Primary Talent</p>	<p>CAE Number 263218578</p> <p>CAE Number 263218774</p> <p>Party ID 1565439</p> <p>Performer ID 101175081</p> <p>Account UKMU0301</p> <p>Contract R10000153</p> <p>1091</p> <p>Account 10811</p> <p>Party ID 100112453</p>	<p>Heap Imogen Jennifer</p> <p>Heap Imogen Jennifer Jane</p> <p>Imogen Jennifer Heap</p> <p>Imogen Jennifer Jane Heap</p> <p>Imogen Heap</p> <p>Imogen Heap</p> <p>Imogen Jennifer Heap</p> <p>Imogen Heap</p> <p>Megaphonic/Imogen Heap</p>	
	<p>Composition Collection Society</p> <p>Recording Collection Society</p> <p>Record Label</p> <p>Record Label</p> <p>Publishing Company</p> <p>Publishing Company</p> <p>Publishing Company</p> <p>Recording Collection Society</p> <p>Agent</p>		
	<p>Twitter</p> <p>YouTube</p> <p>Vevo</p> <p>Facebook</p> <p>Google</p> <p>Vimeo</p> <p>Spotify</p> <p>iTunes</p> <p>Supapass</p>	<p>imogenheap</p> <p>imogenheap</p> <p>ImogenHeapVEVO</p> <p>imogenheap</p> <p>Amq6fcvI4p5dgi5lixiteuna7i</p> <p>imogenheap</p> <p>6Xb4ezwoAQC4516k89nWz</p> <p>https://tun.es/gb/cyaxb</p> <p>imogenheap</p>	<p>Social Media</p> <p>Content Hosting</p> <p>Content Hosting</p> <p>Social Media</p> <p>Google Music Artist Page</p> <p>Vimeo Artist Page</p> <p>Spotify Artist ID</p> <p>iTunes GB Artist Page</p> <p>Artist Page</p>
	<p>2.01m</p> <p>50,430</p> <p>49,482</p> <p>693K</p>	<p>Blogger</p> <p>Director/ Blogger</p> <p>Blogger</p> <p>Director/ Blogger</p> <p>Recording Artist</p> <p>Recording Artist</p> <p>Recording Artist</p>	

BIO	CONTACTS	PRESS PICTURES
<p>TECHNICAL SKILLS</p> <p>Photoshop</p> <p>Pro Tools</p> <p>Ableton</p> <p>mi.mu Gloves</p> <p>Sound Engineering</p> <p>Mixing</p>	<p>CREATIVE SKILLS</p> <p>Musical:</p> <p>Production</p> <p>Tuned percussions</p> <p>Keyboards</p> <p>Piano</p> <p>Vocals</p>	<p>LIFE SKILLS</p> <p>Mother</p> <p>Public speaking</p> <p>Mentoring</p> <p>Managing</p>
<p>Mum</p> <p>PRS Foundation Ambassador</p> <p>St Francis Hospice Ambassador</p> <p>Drake Music Foundation Ambassador</p> <p>Steamliner Investor Ambassador</p> <p>Weavlo Ambassador</p> <p>FAB Ambassador</p>	<p>ROLES</p> <p>Air CEO Eac</p> <p>The Grand Architect/Founder</p> <p>Mycelia</p> <p>Founder Ceo, Mi.mu Gloves</p> <p>Owner Megaphonic Records</p> <p>Owner Megaphonic Publishing</p> <p>Hideway Recording Studio.</p> <p>The Barn's Owner Curator</p>	<p>Songwriter</p> <p>Composer</p> <p>Recording Artist</p> <p>Performing Artist</p> <p>Session Musician</p>

Accounts, all that good stuff... All my skills, if somebody is looking for some specific skills... It basically enables anyone that's not known to the world to have a look into getting a job maybe as a guitarist, because they've realised they were just down the road and they've had some pretty good reviews, I've never heard of them but they've had some good reviews on this service... So it's kind of like a marketplace too.

BIO	CONTACTS	PRESS PICTURES	
	IDs		
TECHNICAL SKILLS	CREATIVE SKILLS	LIFE SKILLS	
CURRENT PROJECTS	INTERESTS	CHARITIES	
Mycelia World Tour The Old Barn Hideway Studios mi.mu Gloves The Life Of A Song Creative Passports 3 Songs Pilot The Listening Chair Media <u>everywhere</u> Box Of Tricks Sonic Couture On Stage With <u>Cymatics</u>	Hiking Cooking Dancing Science And Tech Natural Science Astronomy	St Francis Hospice Charity Water Drake Music Brit School	
SPONSORS	COLLABORATIONS		
	Taylor swift <u>jeff</u> back deadmau5 <u>ianx</u> <u>mika</u> <u>jon</u> <u>bon jovi</u> <u>nitin sawhney</u> Way Out West LHB <u>Mich</u> Gerber	Nick Ryan Jon Hopkins <u>Josh Groban</u> Frou Frou Urban Species	Dolby <u>Sennheiser</u> Digital Catapult Goldsmith University Middlesex University Westminster University Southampton University West England University Sonic Couture Streamliner

Because I imagine, in the event of a natural disaster, as an artist, to be able to generate money so that any time somebody was playing my music, to be able to on that day go, "Okay, this is something I care about, this is a country that I've been to, I really care about the people, and all of my money from all of my songs on this day I want to go to this disaster relief fund," and to be able to have some way to visualise that, so that you're reaching out to your fanbase, to anyone that's listening to your music and spreading... like an umbilical cord to your songs, so that it doesn't just stop the relationship. When you release your song, currently you just release a song and off it goes and you've got no idea what happens to it really, different organisations trying to get money from it if they've got their data correct, and it's a very distant relationship we have. But if there's a way that this song is always linked and always receiving information to and from, then we could start to really speak out and reach out and share, and hopefully rather than somebody putting together a really expensive concert that cost a million pounds to put together that could have gone to a disaster relief fund, we just make it really easy for people to donate.

	<u>BIO</u>	<u>CONTACTS</u>	<u>PRESS PICTURES</u>
		<u>IDs</u>	
<u>TECHNICAL SKILLS</u>		<u>CREATIVE SKILLS</u>	<u>LIFE SKILLS</u>
<u>CURRENT PROJECTS</u>		<u>INTERESTS</u>	<u>CHARITIES</u>
		<u>CREATIVE OUTPUT</u>	
<u>MUSIC</u>		<u>HARDWARE</u>	<u>SOFTWARE</u>
		<u>PAYMENTS</u>	
Keybase.io	Public Key	B2C6E2F280F8ADFC	keybase.io/imogenheap
Bitcoin	Bitcoin Address	16diWTDN8DUxsX994Wzy NAotVp36qBqXku	<u>Cryptocurrency</u> Wallet
Ether	Ether Wallet	0xc9fc5b87dd304e1f166c ab6d17301a27ea34710a	<u>Cryptocurrency</u> Wallet



MYCELIA

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mycelia@imogenheap.com

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