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Lloyd's Innovators Group

"Zest for Enlightenment"

À La Recherche Du Temps Trouvé

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 @mrmainelli

10 July 2019, Lloyd's of London

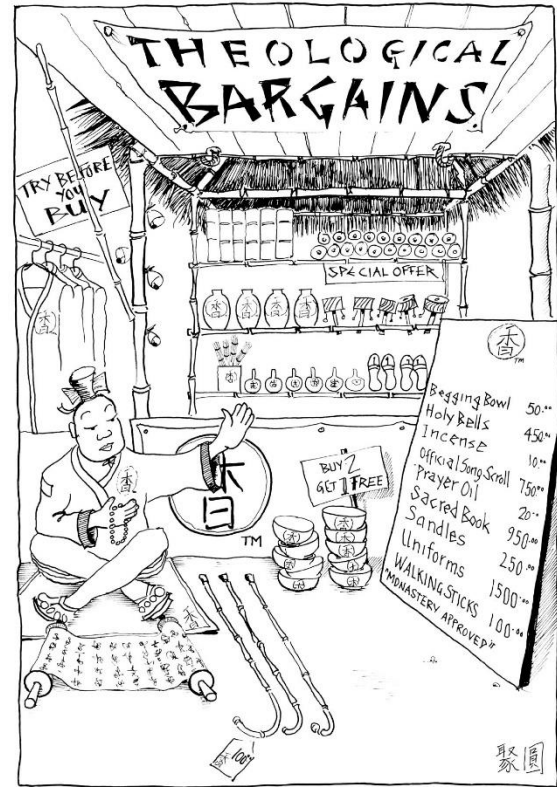




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Outline

- ◆ London insurance
- ◆ Z/Yen sample ideas
 - IndeZy – insurance price indices based on ‘model’ contracts
 - Cyber-catastrophe insurance-linked securities
 - Policy performance bonds
 - ChainZy – smart ledgers & ‘internet of record’
 - IDChainZ – identity
- ◆ Thoughts on Temps Perdu



"Get a detailed grip on the big picture."

Chao Kli Ning



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Z/Yen

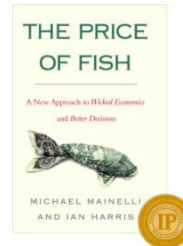
London Accord



The Global Financial Centres Index



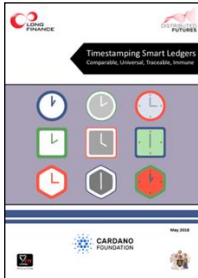
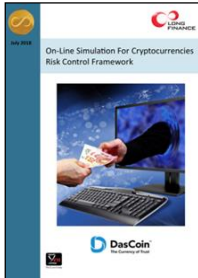
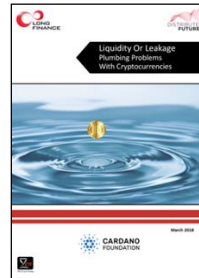
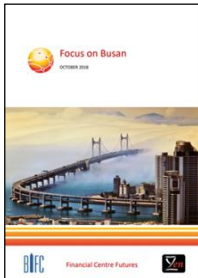
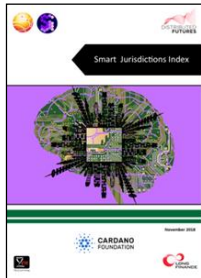
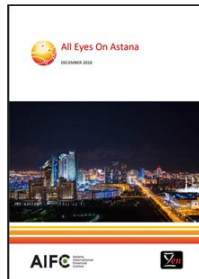
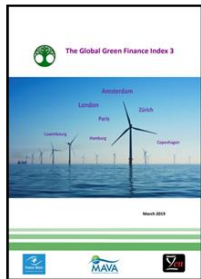
- ◆ Special – City of London’s leading commercial think-tank
- ◆ Services – projects, strategy, expertise on demand, coaching, research, analytics, modern systems
- ◆ Sectors – technology, finance, voluntary, professional services, outsourcing
 - Independent Publisher Book Awards Finance, Investment & Economics Gold Prize 2012 for ***The Price of Fish***
 - British Computer Society **IT Director of the Year** 2004 for PropheZy and VizZy
 - DTI **Smart Award** 2003 for PropheZy
 - *Sunday Times* Book of the Week, ***Clean Business Cuisine***
 - £1.9M **Foresight Challenge Award** for Financial Laboratory visualising financial risk 1997





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Recent Research





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More Connectivity



Many Hands



Long Hand

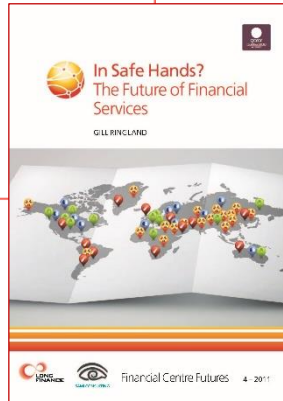


Second Hand



Visible Hand

Community based



← Geography matters

→ Virtual connections

↓ Washington consensus



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What's The Problem?

- ◆ Insurers need to chat to insurers:
 - broker to broker
 - broker to underwriter
 - underwriter to reinsurer
- ◆ Insurers need to chat with suppliers:
 - broker and underwriter to lawyer and accountant
 - broker and underwriter to risk specialists
 - loss adjusters
- ◆ Insurers need to chat with customers – many of whom are “professional”, e.g. captives
- ◆ No central directory among fragmented markets, even in the global centre, London



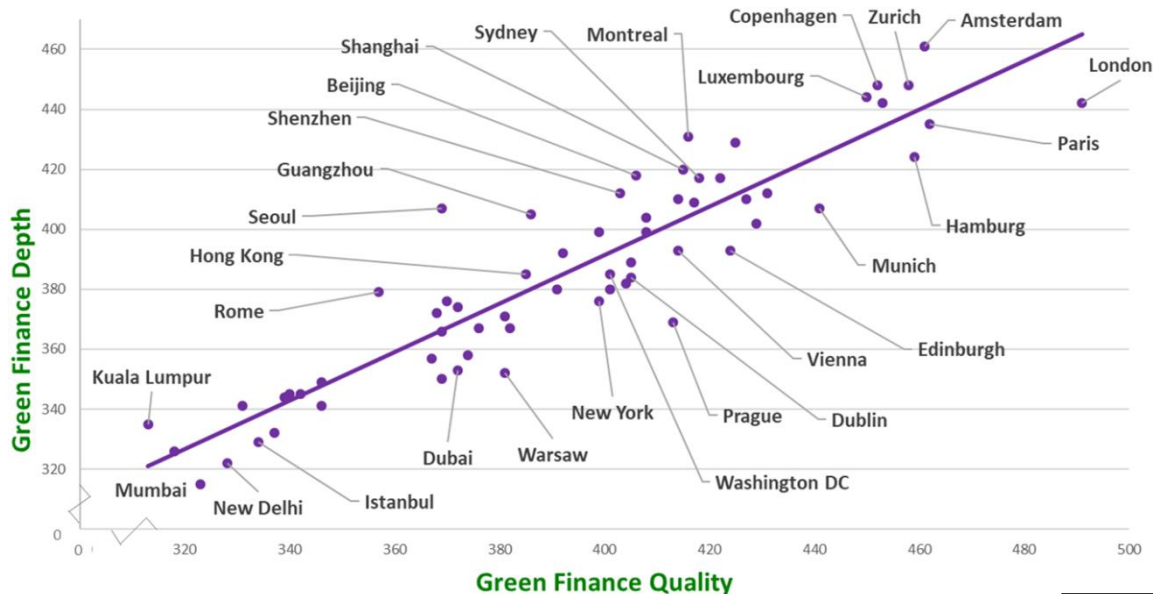
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Competition

Rank	Banking	Investment Management	Insurance	Professional Services	Government & Regulatory
1	London	New York	New York	New York	London
2	Shanghai	Hong Kong	London	Hong Kong	New York
3	New York	London	Hong Kong	London	Hong Kong
4	Hong Kong	Shanghai	Singapore	Singapore	Singapore
5	Singapore	Singapore	Shanghai	Shanghai	San Francisco
5	Beijing	Toronto	Zurich	Tokyo	Zurich
7	Frankfurt	Tokyo	Tokyo	Toronto	Shanghai
8	Tokyo	Beijing	Frankfurt	Sydney	Sydney
9	Toronto	Dubai	Shenzhen	Zurich	Frankfurt
10	Dubai	San Francisco	San Francisco	Dubai	Tokyo
11	Zurich	Zurich	Sydney	Los Angeles	Seoul
12	San Francisco	Cayman Islands	Paris	Boston	Melbourne
13	Shenzhen	Boston	Beijing	Frankfurt	Dubai
14	Abu Dhabi	Luxembourg	Toronto	San Francisco	Toronto
15	Paris	Frankfurt	Geneva	Cayman Islands	Boston



Depth And Quality



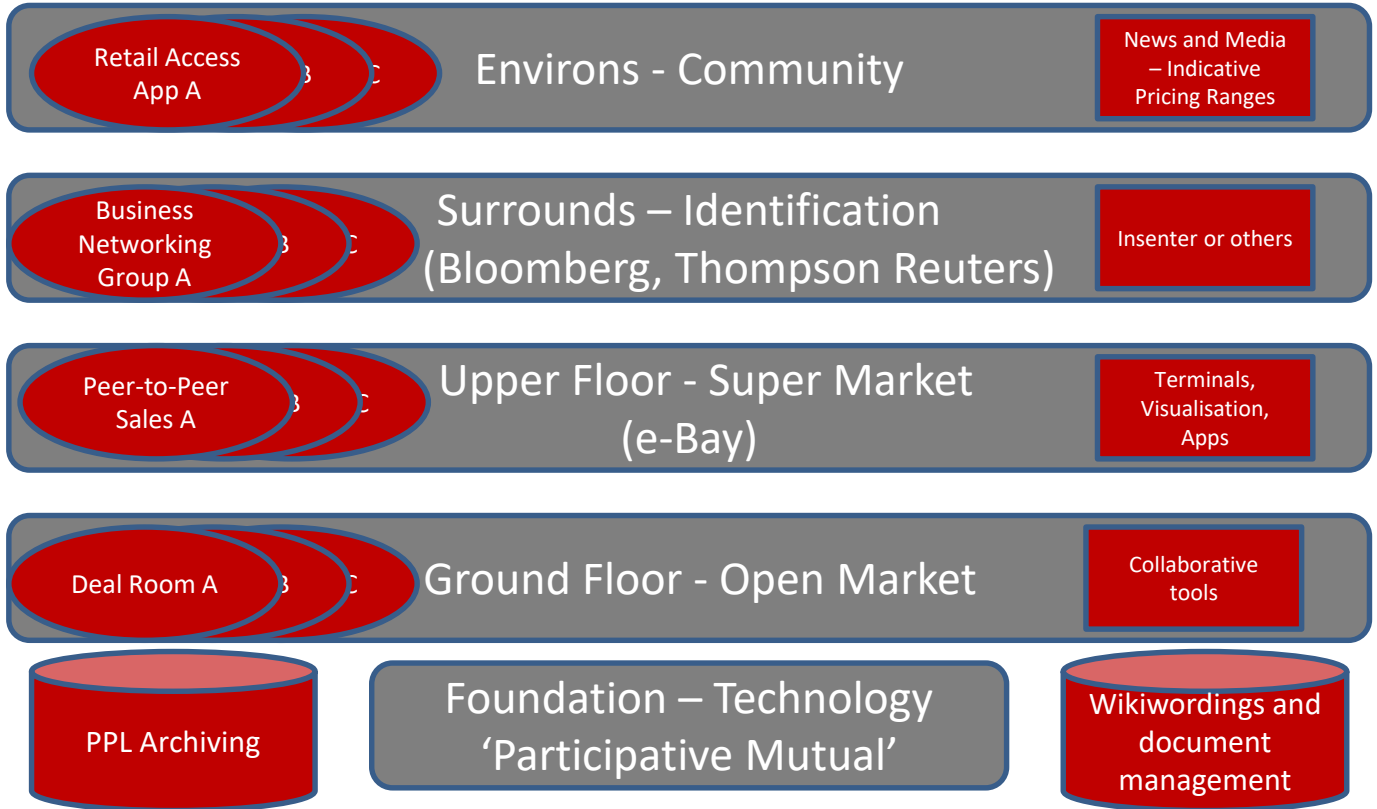
- ◆ Depth - the amount of green finance is seen as a proportion of the activity in the centre
- ◆ Quality - green finance intensity





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'Royal Exchange' – Building Blocks



[moving on from – “Clustering & Technology In Global Insurance: A Right Royal Exchange Of Viewpoints”, 10 October 2013, https://fsclub.zyen.com/media/documents/Clustering_And_Technology_In_Global_Insurance.pdf]



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Z/Yen Ideas





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Anything Missing?





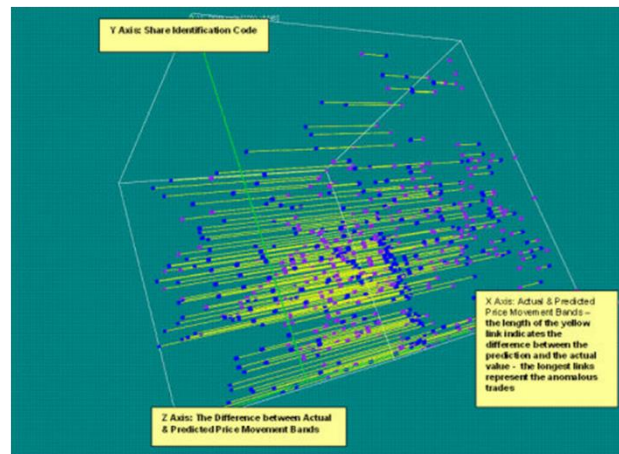
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IndeZy – Indicative Prices



- 'Model' contracts
- Ranges
- Confidence levels

[Source: www.indezy.com]

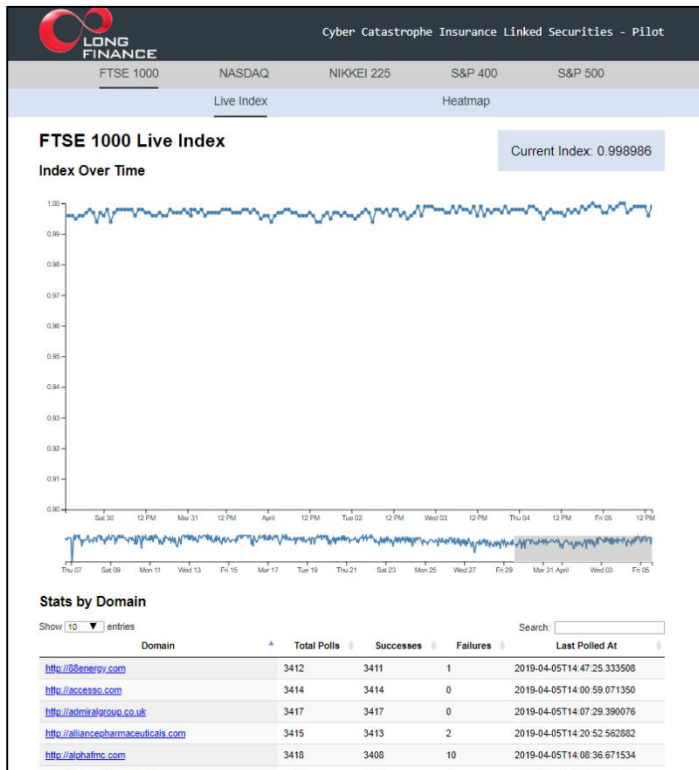




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Cyber-Catastrophe Insurance-Linked Securities

... on smart ledgers

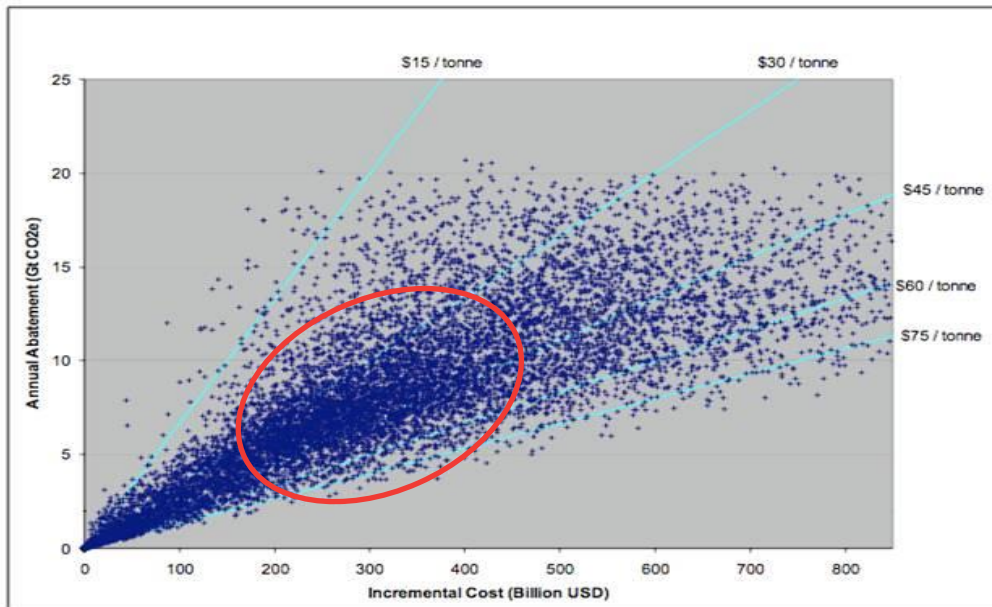




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Investment Achievable With Pricing

Successful model portfolios exist – though **concentrated** at €30 to €60 per tonne



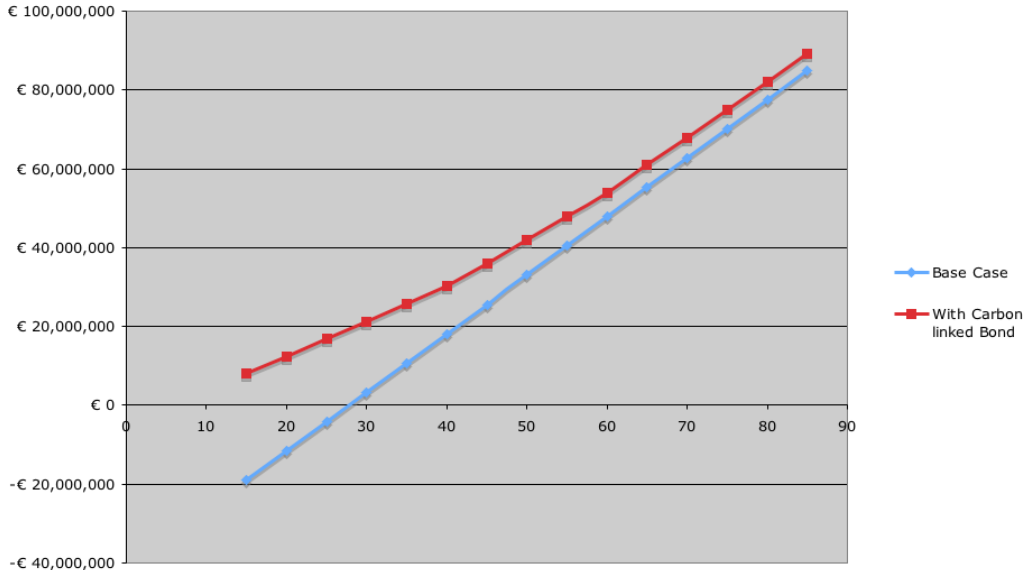
D5: [A Portfolio Approach to Climate Change Investment and Policy](#) — James Palmer, Mark Yeandle and Michael Mainelli, Z/Yen, London Accord (2007).



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Leveraged Example

Effect of Hedging Carbon Price on Cashflow



- ◆ ESG & green energy projects are identical to other energy projects, BUT require trust in governments enforcing CO₂ targets
- ◆ Governments can put their money where their mouths are, and attract material investment to support their policies



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Policy Performance Bonds

Project Site - <https://www.longfinance.net/research/research/sustainability/policy-performance-bonds-index-linked-carbon-bonds-index-linked-forestry-bonds/>

Balanced article

Gilding Government Debt: Government Innovation And Risk Management	Michael Mainelli	2009	Journal of Risk Finance, Number 10, Volume 5, Emerald Group Publishing Limited (November 2009), pages 537-39.
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Shortest article

De-Risking Government: Bonding Nicely	Michael Mainelli	2011	Corporate Financier, Issue 129, Institute of Chartered Accountants in England and Wales (February 2011), page 13.
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Booklet



L'Innovation Financière Au Service Du Climat: Les Obligations À Impact Environnemental	Abdeldjellil Bouzidi and Michael Mainelli	2017	Revue Banque (Février 2017), 128 pages.
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Smart Ledgers



About ▾

Stats ▾

Case Studies ▾

Products ▾

The Mutual

Last Geo Timestamps (UTC)
2019-07-10 12:09:23.499213

Total Geo Timestamps
10697
in last 24 Hours

Total Cities
306
in last 24 Hours

Total Countries
47
in last 24 Hours

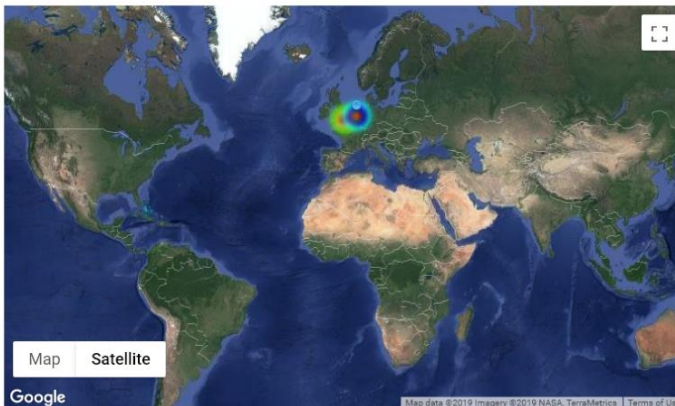
Geo Timestamp Rate
0.1238
per second

Timestamps Location

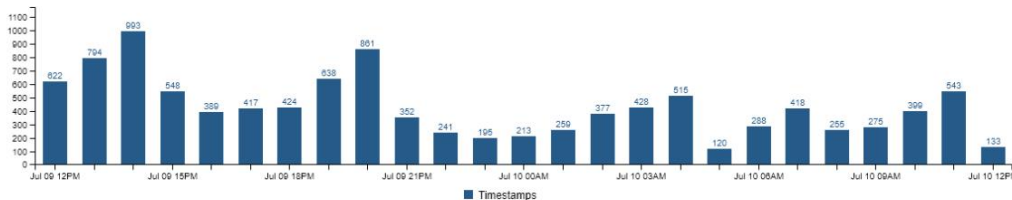
Last Stamp Country
Netherlands

Last Stamp City
Leiden

Top Countries	
United Kingdom	28.64%
United States	22.46%
Netherlands	11.04%
Australia	7.97%
New Zealand	7.80%




Activities in last 24 hours





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ChainZy.com

 ChainZy [About](#) - [Stats](#) - [Case Studies](#) - [Products](#) - [The Mutual](#)

Case Studies

ChainZy is a set of [working products](#) handling tens of millions of transactions per year. The ledgers are sometimes viewable, and the clients below give some idea of the breadth of applications or demonstrations already complete (* = viewable ledger, L = live application, D = demonstration/pilot).

[TimeChainZ - Clinical Assessments](#) *L

[TimeChainZ - MovieSweep](#) *L

[TimeChainZ - States of Alderney](#) *L

[TimeChainZ - Youthinmind](#) L

[TimeChainZ - Regulatory Reporting For High-Frequency Trading](#) D

[TimeChainZ - Book Publishing Download Authentication](#) L

[IDChainZ - Mobile Application](#) D

[SmartChainZ - FastTrackTrade](#) *L

[SmartChainZ - Fishface](#) L

[SmartChainZ - IoT Refrigerator Timestamping](#) D

[SmartChainZ - Cyber-Catastrophe Insurance-Linked-Security Index](#) *L

[TimeChainZ - Catenae Uses ChainZy For Firedoor Inspections](#) L

[TimeChainZ - SafeShare Insurance](#) L, now D

[GeoChainZ - GeoGnomo](#) D

[GeoChainZ - GeoTono](#) D



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Application: MetroGnomo – Timestamping & Datalogging



MetroGnomo **BETA**

Open-Source Distributed Timestamping

Home About News

Stamp #! Check Stamp Retrieve File Register View Live Ledger Hold Recover

Obtaining Proof Of Existence

MetroGnomo **BETA**

Open-Source Distributed Timestamping

Home About Press Contact us

Last MetroTime 2018-01-24 19:20:38.105496 Last Timestamp 14s ago Average Duration 14s

MetroGnomo **BETA**

Open-Source Distributed Timestamping

Home About News

View Live Ledger

Current Time 2016-03-26 11:17:33 AM Last MetroTime 2016-03-26 12:15:01.964577 Last Timestamp 153s ago Average Duration 201s

Timestamp Time (s) Average Timestamp Duration (s)

Show 10 entries Search:

UUID	MetroTime	RowHash	TableHash	Tag
90203345				
-50c-477	2016-03-26 1	476450e098d7167e1c078648733707	326b23c0697a6a2342c1f854-8085010	2016-03-26T12:15:01-00:00@timeapi.org
e-95c-90	2 15:01.96457	Bac1b9e0928c286fb704e2328599d0e	d4ee229337c36fa4be21e767319	
47577e5f	7	6		

Timestamp Time (s) Average Timestamp Duration (s)

Search:

wHash	TableHash	Tag
450ff4031de277cebdabd87838d5 1f824ed499608fc1ecb9d4ce2a65c	4eb334a98d13c03592861cc6f3cbe1Dc50 e2d4659fe9b29b6fb3d01b87709	188.223.80.48
df44995a0a22fab0a093a41993192 205d85c106c4fe310ce4784cd495d	6ec8845f03c3b1847ac8fa2f0852318be585 aad7d42338e03aaf7ce09e400d53	The+secular+cooling+that+must+someday+overtake+our+planet+has+already+gone+far+in+deed+with+our+neighbor+our.
07f194e0ba0d3eb888850e90004f0 0550f0e208cbf5774d6e2cd2a685	772f534b0ca0d136ab7e97760cd0c18c04 dc0889728cb090907eb5c0ed90aff	63+Jackson+Bvd, Nor+the+ach,+MT,+01794
4850003887119b0702b09ead09af0 5600b0b07e5a143d8894101016b2	c9364abae48e50e2756e20703b79874337 4aca5e3e2a32281e0289d20a4e31c	Jackson+Ave
4b050cc02aef06cb8cf4c18e40305 4492bf9ab9ebd48020bc37835950a	ce7c928edbb0a2e30fa1c0300e7110f7f5b 30319dab8c4e8d1cc7be91bce72f1	San+Martin

0165e898-4a74-49fb-8c0c-cb55cc4f417f	2018-01-24 19:20:28.909784	cbc804ae974c8872e0115e2fa43f437f3d404d2e3d0945872ebfb809f158532	b7242a16e501cf4f46747ef5a5385050a2b8e5e2f682bf0f800e0daa4bafede	elizabethmiller@test.c
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Application: GeoGnomo – Geostamping



GeoGnomo Code <input type="text" value="1,India,Quebec,Juliet,6,India,Mike,Kilo,Quebec"/>	Latitude 47.2639950349	Longitude 0.0000339739
Level <input type="text" value="20"/>	Top Neighbor Code N/A	Left Neighbor Code 5,Romeo,November,Quebec,November,Victor,Romeo,Victor
Get Latitude and Longitude	Bottom Neighbor Code 1,Juliet,6,India,Mike,Kilo,Quebec,Hotel,Alpha	Right Neighbor Code 1,Juliet,6,India,Mike,Kilo,Quebec,Juliet,et,8

(Latitude: 47.2647, Longitude: -0.0009)

Map data ©2016 Google. Terms of Use. Report a map error

[Use my current location](#) [Get GeoGnomo Code](#)

Quaternary Code

1,2112221212211122212221222

Top Neighbor Code

N/A

Bottom Neighbor Code

1,India,Quebec,Juliet,6,India,Mike,Kilo,Quebec,Hotel,Alpha

GeoGnomo Code (Base 32)

1,India,Quebec,Juliet,6,India,Mike,Kilo,Quebec,Juliet,Alpha

Left Neighbor Code

5,Quebec,Victor,Romeo,November,Quebec,November,Uniform,Victor,Romeo,Victor

Right Neighbor Code

1,India,Quebec,Juliet,6,India,Mike,Kilo,Quebec,Juliet,8

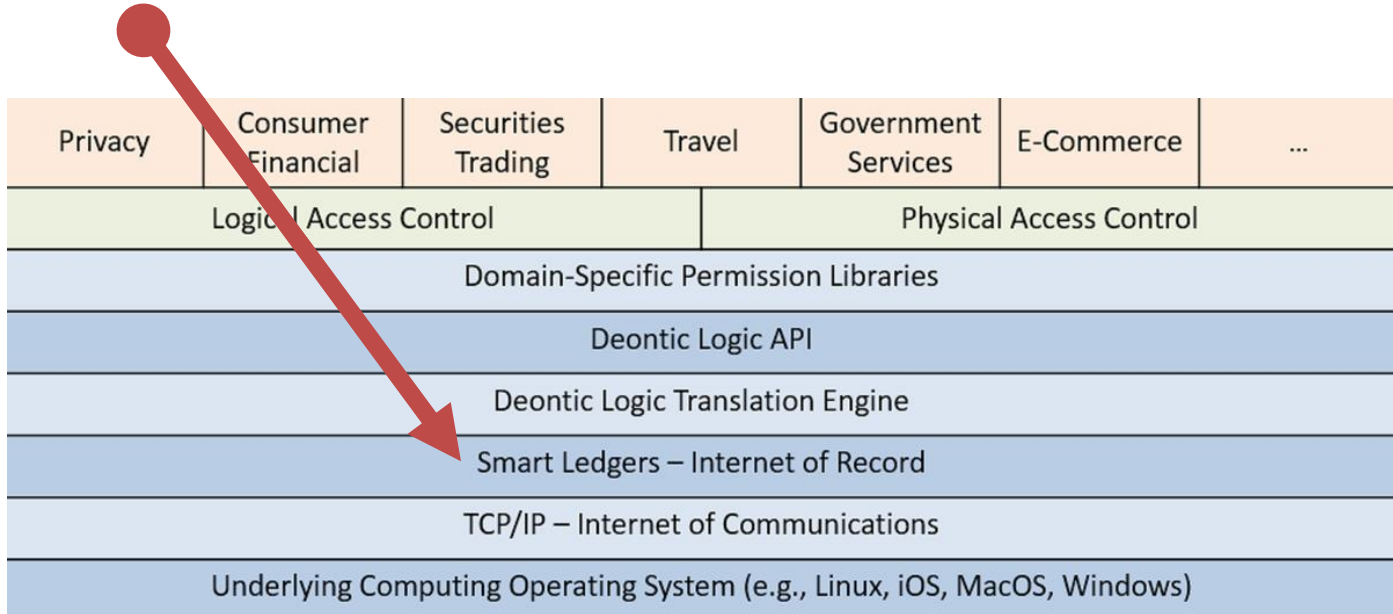
(Latitude: 53.5737, Longitude: 2.8744)





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'Internet of Record'





Follower Syndicate In Code

```
set % underwriting to 0
set # Insurers >= 7% to 0
if A u/w% ≥ 7
do change # Insurers >= 7% by 1
if B u/w% ≥ 7
do change # Insurers >= 7% by 1
if C u/w% ≥ 7
do change # Insurers >= 7% by 1
set Total u/w% to A u/w% + B u/w% + C
if Total u/w% ≥ 20
do if # Insurers >= 7% ≥ 2
do set % underwriting to Total u/w% × 0.03
```

Language: Python

```
from numbers import Number

__Insurers_3E_7_25 = None
_25_underwriting = None
A_u_w_25 = None
B_u_w_25 = None
C_u_w_25 = None
Count = None
D_u_w_25 = None
Total_u_w_25 = None

_25_underwriting = 0
__Insurers_3E_7_25 = 0
if A_u_w_25 >= 7:
    __Insurers_3E_7_25 = (__Insur
if B_u_w_25 >= 7:
    __Insurers_3E_7_25 = (__Insur
if C_u_w_25 >= 7:
    __Insurers_3E_7_25 = (__Insur
Total_u_w_25 = (A_u_w_25 + B_u_w_
if Total_u_w_25 >= 20:
    if __Insurers_3E_7_25 >= 2:
        _25_underwriting = Total_u_w_
7
if false:
    pass
```



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Not Payments



From Slips To Smart Contracts

Intelligent Technology

In The London Wholesale Insurance Market



A Long Finance report prepared by Z/Yen Group
January 2017

Sponsored by the
London Market Group



A Wholesale Insurance Executive's Guide To Smart Contracts



A Long Finance guide prepared by Z/Yen Group
January 2017

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Permissioning Markets

The image shows the cover of a report titled "Information Rules: Smart Ledger Architectures & Distributed Permissions". At the top left is the "LONG FINANCE" logo, and at the top right is the "DISTRIBUTED FUTURES" logo. The title is centered in a black arrow-shaped box. Below the title is a photograph of a busy trading floor with two large, tilted signs: a red one on the left that says "PERMISSION REQUIRED" and a green one on the right that says "PERMISSION GRANTED". At the bottom of the cover, there is a blue and white striped bar, followed by the "CARDANO FOUNDATION" logo and the date "November 2018". In the bottom left corner of the cover is a small "Z/Yen" logo.

LONG FINANCE

DISTRIBUTED FUTURES

Information Rules: Smart Ledger Architectures & Distributed Permissions

PERMISSION REQUIRED

PERMISSION GRANTED

November 2018

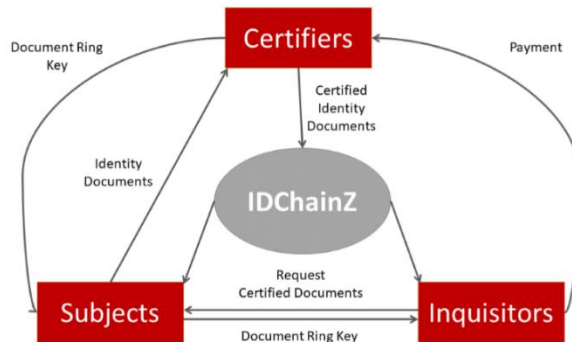
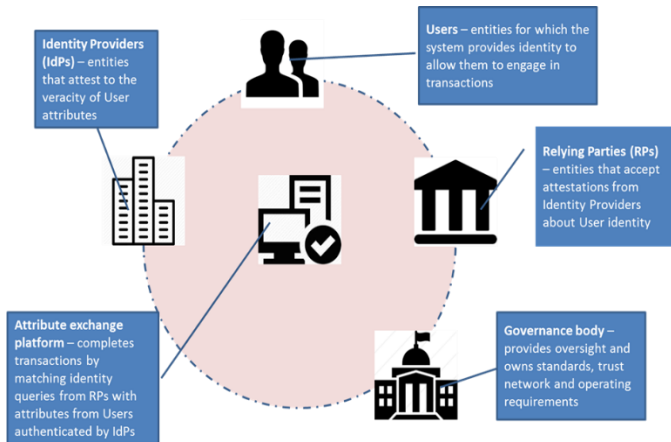
CARDANO FOUNDATION

Z/Yen



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IDChainZ



1) User saves selected Identity ring files onto a new sub-ring for the Relying Party



2) User sets time and use limits on the Relying Party's ring



3) User sends the Relying Party the key for this limited access ring

Inquirer's Ring Key:
2f641e7e-9b4c-4110-8eb4-ec4014f68c6
Access:
1) by App
2) or <https://185.77.66.18:3000/api>



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Real Work Needs Identity

InterChainZ - Identity Validator Use Case

Identity Validator

Service User

Logout

Add Data to Ledger

+ Add New Entry

+ Add Entity Data

Show 10 entries

Row Height	Row Hash	Created	Entry Type	Category	Company	File Name
1	0000f426915...	06-08-2015 09:37:41	Identity		EW715	EW715.t...
2	00000150d3e...	06-08-2015 09:38:05	Company Data		EW715	EW715G...eport.pdf
3	0000ebbbb48...	06-08-2015 09:38:16	Company Data		EW715	EW715ID...df
4	000090d2124...	06-08-2015 09:38:29	Company Data		EW715	EW715S...ySheet.p...
5	000092bb08b...	06-08-2015 09:38:41	Company Data		EW715	EW715U...pdf
6	0000c10a4ca...	06-08-	Company		EW715	EW715Whole...File.pdf
					EW715	EW715WorldC...heckreport.pdf

EW715WorldCheckreport.pdf

< Return to ledger | Download File | Verify File Hash | Verify Signature | Download Public Key

Row height: 7

Row hash: 0000befadd83449914c49265d53bde73ce1ad315289623592451c85cda8675f

Previous Row: 0000c10a4ca313594898a2c1cbca1fa2afb1277b4f01910a1331f1f99db5c9

Created: 06-08-2015 09:39:03

Entry Type: Company Data

Category:

File Hash: 8d0c994bec277c4532e7e077996dce0536988679a174c8ef136988731695e2

File Type: application/pdf

File Size: 203Kb

File Name: EW715WorldCheckreport.pdf

Geo Location: (51.5151230, -0.0910000)

Public Key: 30819f900d06092a6e5f7b3ac46d1d9a8b1c847733344c922b06...

Signature:

Nonce:

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You are strictly prohibited from disclosing or copying the content of this service to third parties excluding regulatory agencies.

Please note

- (1) General Legal Notice
- (2) Category Legal Notice
- (3) Reported Link Legal Notice

Bens Keyring

Key Ring ID: 3cc2f819-6368-4245-8b71-b592a2d4cf98

Found: All discounted based on name mismatch. One Exact Match - Queen of England (PEP)

Printed: 10-10-2013 10:06 UTC

Windsor	First Name	Last Name	Category
1	Anne Elizabeth Alice Louise	Alice Louise Windsor	INDIVIDUAL
	Alexandra	Alexandra Mary Windsor	INDIVIDUAL
	Elizabeth Alexandra Mary	Elizabeth Alexandra Mary Windsor	POLITICAL/INDIVIDUAL

Properties (3) | KRING | History (5)

Notes (0) +

Go to subring (0)

Set a subring (0)

Sprites (0) +

Files (2) ±

Copy to subring



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Generic Impact

Economy	time reduction	fewer geographical sites or travel	fewer steps	less material or time
Efficiency	greater throughput per period	load balancing geography	load balancing functions	more output for given inputs
Effectiveness	on time for customer	right place	correctly performed	value for money
Innovation	radical time change	personalised	elimination or automation	step change in approach

Time

Place

Function

**Resource
Consumption**

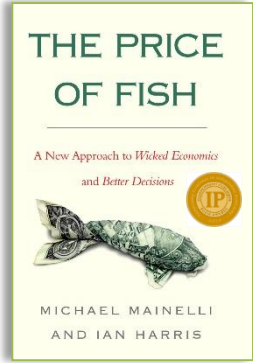


When Would We Know Our Commerce Is Working?

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“Get a big picture grip on the details.”
Chao Kli Ning



Thank you!

