

Enabling formalising of the informal markets through block chain for unregistered Real estate

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1. INTRODUCTION

Asia-Pacific's commercial real estate market is projected to grow at an estimated above 10% annually. By 2021, the Asia-Pacific region is anticipated to contain USD 19.1 trillion in institutional grade commercial real estate, relative to Europe with USD 13.3 trillion and the US and Canada with USD 11.5 trillion. (Prudential Real estate investors , 2012). By 2030 in Asia itself the middle class growth increases from 500 million people to 3.2 billion people. As a percentage of global stats it is projected to increase from 30% currently to 64% by 2030 and Asia accounts for more than 40% of global middle class consumption as against combined North America and Europe share drop from 54% to 17% (Kharas et al, 2010).

Developing economies in Southeast Asia, China and India are experiencing rapid urbanization due to increasing interest for the people to get urbanized. In China alone, over 50% of its population has become urbanized with up to 30 million people moving into China's tier 1 and 2 cities annually. So it is in this context there could be an increased stress on the housing. Migration of people toward urban cores will mean movement from rural areas to cities, creating demand for new and upgraded housing, infrastructure. So the possibility of informal settlements across the globe might see a significant increase.

2. SCOPE

World bank reports identified that informal firm owners are averse to paying increased taxes although they like their firms to become formal. Registered firms are 54 percent more likely to have a bank account and 32 percent more likely to have loans. Informal activities are a major part of the overall economy in developing countries and are estimated to be around 40-50 percent of official GDP.

Registered firms are 54% more likely to have a bank account and 32% more likely to have loans. Informality has the ineligible capital for securing a mortgage to build or purchase homes. Our research is explorative about the role of fin tech 3.0's disruption using blockchain for improving access to credit in real estate management- thereby enabling the formalising of the informal during rapid urbanisation.

For this research work we leverage on the findings of UN ECE work on the formalizing of the Informal: Challenges and Opportunities of Informal Settlements in South-East Europe.

3. INFORMAL MARKETS

The United Nations has used the term “informal settlements” to refer to:

- i) residential areas where a group of housing units has been built on land to which the occupants have no legal claim, or which they occupy illegally;
- ii) unplanned settlements where housing is not in compliance with current planning and building regulations (unauthorized housing).

3.1. Types of informality

From the studies in UNECE, types of informality are majorly :

- Situations in which the land belongs to the user, with no building permits or permit with unconformity.
- Squatting on state land and squatting on private land belonging to another person, under the post-1991 privatization process.
- construction without a building permit , in excess of building permit limitations, without planning approval

3.2. Reasons of informality

The main reason for informal settlements during urbanisation are

- Poor public administration and ecological concerns due to poor constitutional rights for transforming types of land.
- weak real estate markets at country level.
- weak private-property rights due to established policies promoting state-owned land.
- a cumbersome authorization process for home improvement and modernization.

3.3. Challenges

From the observation of Cyprus, Greece the challenges are broadly territorial, compliance:

- Gradual abandonment and dilapidation due to immigration causing urban deterioration
- The gradual abandonment of mountainous villages.
- Continued urban dispersal and associated peri-urban sprawl.
- Lagging implementation of the protection of nature and insufficient agriculture restructuring.

- Loss of tax revenue to the State due to inspection lapses as the valuation does not include the value of informal constructions.
- Poor garbage collection (also an issue in planned areas) and a lack of security
- Inflexible, centrally driven, costly and bureaucratic spatial and urban planning, lack of the necessary spatial and cadastral data is resulting in ad hoc legal arrangements ex : Olympic infrastructure, Botanikos renewal in Greece (Potsiou, 2007)

4. FORMAL MARKETS

A formalization project normally aims to address illegalities; therefore, formalization is frequently referred to as “legalization of informal settlements”. Formalisation process is dependent on policies involving privatization procedure of the occupied state-owned land, or through legislation that defines a compensation procedure, provision of new titles and might some cases include demolitions and rehabilitations. Formalization also aims to correct existing planning, zoning and construction irregularities in non-permitted construction or those with violated permits. There are three main issues which separate the operation of informal markets from formal markets, namely: the low income nature of informal housing, tenure security, and the interaction between formal and informal housing.

Recommendations from the UNECE and FIG :

UN ECE work on the formalizing of the Informal: Challenges and Opportunities of Informal Settlements in South-East Europe recommended the following for formalisation -

- 1) Countries should strengthen private property rights by - creating mechanisms and sound policies to legalize all properties where the residents have long-standing tenure and ensuring new housing in formal sector, promoting self declaration of informal real estate through low or no fees or legalization costs for the privatization of land and informal real estate.
- 2) Well-established and maintained land registry and cadastral system (like cadastre 4.0), secures land tenure, eliminates squatting on private or public land, and serves the real estate market well. Flexible and pro-growth Planning and Zoning, environmental, safety, and improvement, standards should be set, following privatization and property registration.
- 3) The occupants of both legal and illegal constructions need to be aware of the advantages of legalization, and the necessary procedures to legalize informal property. Countries should agree on International Property Measurement Standards (IPMS) for various types of real estate, to better serve the markets and allow for credit.

4) Planning amnesty should make formalization inclusive and affordable by include most types of informal housing, built without any building permit in order to allow the smooth functioning of the housing market and reduce the demand for informal development.

5) responsibility for compliance with legislation should be with the structural engineer and arrange the procedure for new title issuing from the cadastral agency once the construction is delivered to the new owner.

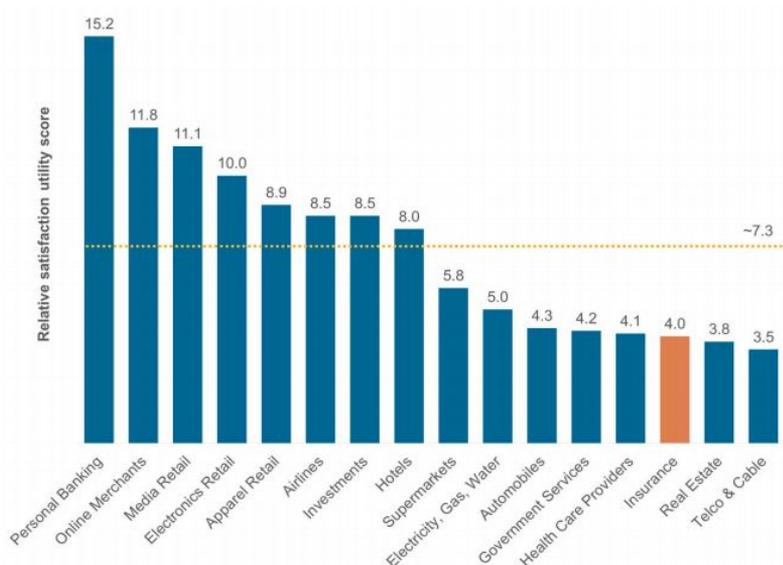
5. FINTECH 3.0 FOR FORMALISING THE INFORMAL

The World bank in its fourth generation of land engagements - “Completion of land titling/Cadastre using new technologies and adopting fit for purpose to compress time of completion from 10-20 years to 3-5 years” (Zakout, 2016) . In Denmark, cadastre and democratization of big data is used to address the changing demands of consumers leading to a fintech enabled real estate management . In the “Second Wave”: incumbent players created leverage on business models through their existing expertise, innovation centers to remain competitive amongst startups while leveraging their established brands and infrastructure and by fostering on the cultural mentality of fintech startups .

5.1 Block chain for Formalising the informal - developing countries

Almost 90% of rural land in Ghana are unrecorded, and many city dwellers are informal. On the individual level, the absence of title also makes it impossible for the mortgage and greatly limits the borrowing. With a legal recognition of the state - Bitland using expertise from Denmark based organisations created Cadastral coin powered by blockchain is helping to develop their land through transparent registers of ecological systems, reducing human corruption in land disputes. This is a system that lead to good land governance instead of unfair grabbing. This project could bring wealth to entire communities through better wealth distribution practices and hence can be seen as evident practice for formalisation.

Figure 1 : Fintech x.0 , Cadastre x.0 and Urbanisation and World bank generations on land engagements since 150 years



Blockchain technologies are very evident in Asia, and has been very well focused in bringing financial inclusion and hence better access to credit. As shown in above Figure 1, Third wave of Fintech also called as Fintech 3.0 will aggressively use blockchain based. FinTech strategy is to distribute digital data globally, So the Cadastre 4.0 will leverage on such distributed ledger systems. It also uses Internet of things to enable a value chain defined by effective use of data.

Figure 4 : Satisfaction of consumer in using online

channels (Source : CB insights, 2016).

From Figure 4, customer satisfaction over usage of the online channels for real estate buy and sell or registration is less than the expected average. So this is perhaps a good indicator creating an impetus to create better online platforms for the betterment of formalisation process.

5.2 ISO standards Blockchain and cadastre 4.0 and Urbanisation

Cadastre 4.0 as a paradigm will close the circle between new technologies and automatization of processes, products and services and stakeholders, including citizen and landowners as essential partners at equal level. It is a partnership model building coalitions /symbiosis between professionals in private and public service, between citizen and users and public authorities and between technology and society. Cadastre 4.0 as it is predicted also should be able to develop a parallel to human brain and henceforth capable of intelligent interactions using 5D (anticipation as the 5th dimension).

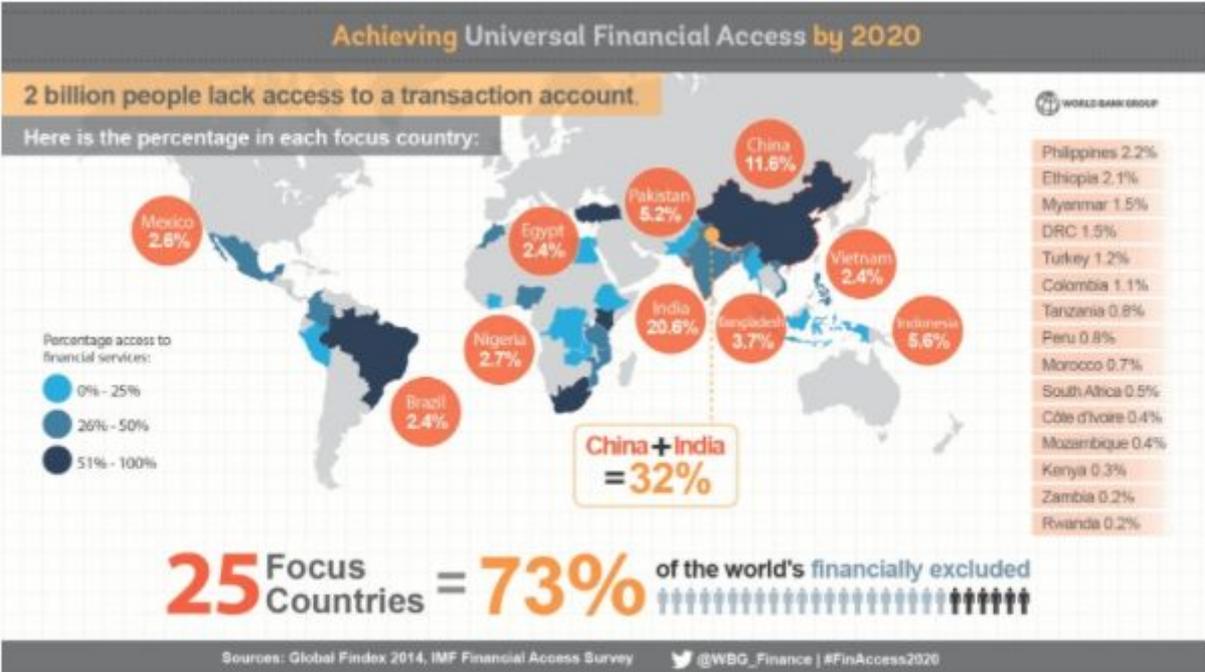
Cadastre 4.0 uses symbiotic web for interaction between humans and machines in symbiosis. Cadastre 4.0 with Fintech 3.0 aims for a disruption in banking systems and at the same time disrupting the collateral backed Mortgage systems. It encourage citizen engagement and greater transparency and accountability to generate more trust and support for the cadastral system.

It is important that the futuristic technologies are linked to development of ISO 37120, ISO/TC268/WG2, ISO TR 37121 which is dedicated to sort out global urban evaluation

indicator system of sustainable development, and the relationship with ISO 37120 , ISO37101 and ISO37151. ISO / TC 211 for cadastre and ISO/TC 307 for blockchain should be implemented in synchronous way with ISO TC 268 of sustainable urbanization to bring in formalisation under international standards.

5.3 Block chain for access to credit and financial inclusion

As of October 2016, there are 2 billion people that doesn't have an access to transaction account. As shown in Figure 3, it will increase alongside to rapid urbanisation. Hence more transaction accounts should be created and its possible only through a disruptive technology. For example - More than 90% of Indian banks are on real-time online, centralized core banking solution. This includes online real time payment systems, connectivity, adoption of ISO 20022 standards and introduction of UPI, usage of Aadhar, mobility to drive JanDhan, all can lead to financial inclusion. India is recipient of more than \$70 billion in remittances, the largest globally.



Some 2 billion working-age adults globally do not use formal financial services. Extending access to finance to them is the first building block to build a better life.

Figure 3 : Access to credit statistics

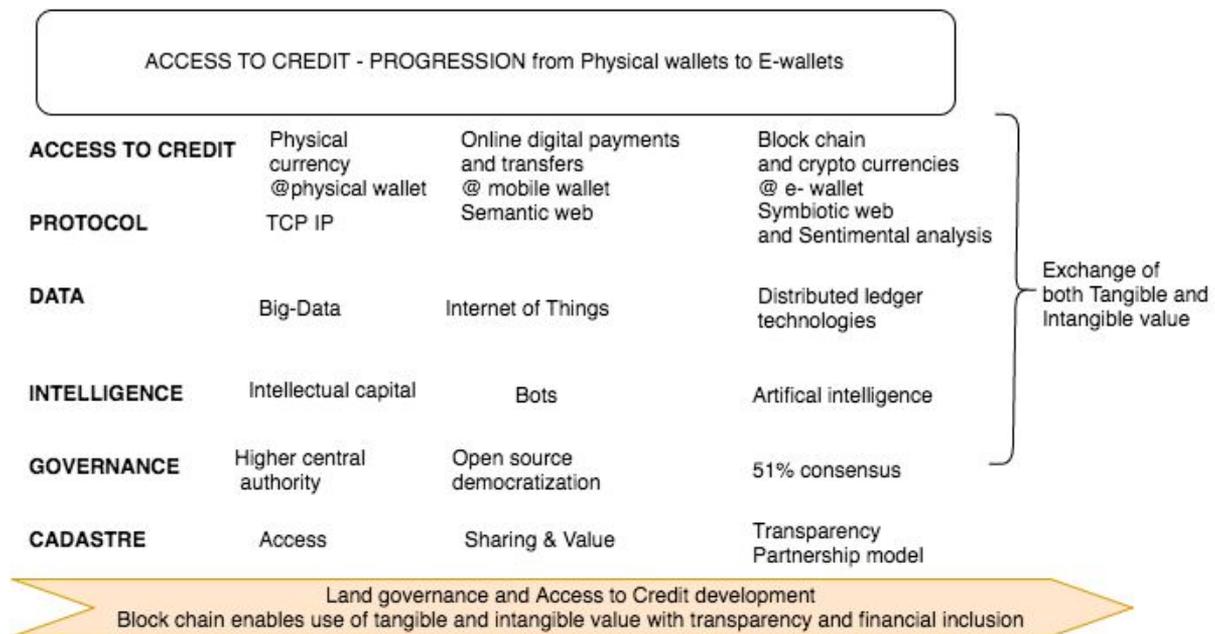


Figure 4 : Changing nature of Access to credit alongside to Governance in Land and finance

Indian IT infrastructure is an enabler to use blockchain through more than 900 million mobile subscribers and mobile app based financial transaction services landscape. Many fintech firms are trying to give banking and credit services to individuals with no credit history, and to businesses considered too risky to get loans from bigger banks. For example : Start-up Bee provides bank accounts, debit cards and financial services all through a mobile app. Paypal enters the fortune 500 - its money transfer App Xoom and Peer to peer applications like Venmo is revolutionising the payments channels and also henceforth improves access to credit.

6.0 CONCLUSIONS AND FURTHER RESEARCH

The dichotomous labeling of informal and formal housing belies the fact that they are imperfectly segmented, implying that their demand and supply curves overlap into the other's markets, hence these markets are not autonomously functioning segmented markets (Elaine, 1997). ISO standards Security may be and the standards of the technology may be questionable. Privacy may be a concern too as personalised search of title or related data of the cadastre 4.0 is possible only at the act of user providing personal data to cadastral engine that has the rules of cadastre 4.0. Urbanisation should include financial inclusion initiatives to speed up the process of formalisation, this is possible only through disruptive technologies as the rate of urbanisation is getting faster than adoption of traditional technological practices in finance. we can expect a Fourth Wave of Fintech with government- and commercial-bank-backed blockchains using permissioned ledgers. A Fifth Wave, which will make blockchain a near-ubiquitous feature of life through IoT devices making the disruption possible to have lesser financial exclusion.

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