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About InterRegioNovation

InterRegioNovation is the International Association devoted to the transfer and exchange of knowledge and innovations at all regional levels (country, region, city, community etc.) between knowledge transfer professionals (business, research institutions, policy makers, government agencies, individuals, others) in all countries of the enlarged Europe, CIS countries and from other continents for stimulating and enhancing economic and social growth in the regions.

This is a policy and research association that brings together all knowledge transfer professionals who are interested in delivering efficient, flexible, innovative and cost-effective services across the private and public sectors. We work closely with business, research and educational institutions, government agencies, policy makers, NGOs, media, individuals and other stakeholders to promote the interests of their industries.

Our members understand the changing needs of the transfer and exchange of knowledge and innovations and through continuous professional development, marketing and networking opportunities offered in this association, we keep current with the latest knowledge trends and issues that challenge people in their work and life journey. We also offer expansive opportunities for partner connection through our networks.

Journal “Regional Innovations” is one of the Association’s tools for innovators and everybody who is interested in any aspects of innovation development.



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About journal

On behalf of the Editorial Board, it gives us a great pleasure to welcome you to the second issue of 2018 of the Regional Innovations Journal.

The Regional Innovations publishes original research papers, policy analyses, review papers and book reviews in order to establish an effective channel of communication between business, research institutions, policy makers, government agencies, and individuals relative to the analysis of various aspects of knowledge and innovations transfer and exchange within regional dimensions.

This is an independent, peer-reviewed, Internet-based international journal devoted to publishing original research papers of highest quality, sharing ideas and discussing innovation sector within regional dimensions. The journal welcomes to submit research papers by exceptional innovators, leading universities, globally recognized business, government agencies, policy makers and political leaders.

We intend that our readers will be exposed to the most central and significant issues in innovations development. We wish to publish papers that exemplify the highest standards of clarity, and that promise to have significant impact on existing front-line debates or to lead to new ones. The journal explores key priorities of the knowledge and innovations transfer and exchange in terms of critical aspects of human life (economy, law, science, business, health, education, culture etc.). We therefore welcome submissions not only from established areas of research, but also from new and emerging fields and those which are less well represented in existing publications, e.g. engineering studies, biomedical research etc.

We also strive to ensure that being under expert evaluation, each submission will receive developmental and supportive comments to enhance the article. Our refereeing process will involve that each submission will be reviewed by one or more specialists in the relevant field. Articles will be added to the volumes and the journal audience will receive e-mails updates to encourage them to the new articles.

We are delighted with, and immensely grateful to the large numbers of colleagues, both members of the Associations InterRegioNovation and FranceXP (France), representatives from many universities in France, Latvia, UK, Azerbaijan, China, Nigeria, Belarus, Ukraine and other institutions, who have supported the editorial process. And we are very proud of the expertise that they collectively bring, which we believe is unsurpassed by any contemporary innovative journal.

We are immensely grateful to our colleagues for their support and advice through the process of setting the journal up, and for the confidence they have placed in us in supporting this initiative at a time of economic uncertainty.

In the development of the Regional Innovations to date, we would like to enlist the support of a number of organisations who wish to promote this online journal to their experts. To ensure its sustainability, we would also like to invite other organisations, networks, conferences and meetings to associate themselves with the Regional Innovations. We therefore aim for the Regional Innovations to become the leading online forum to globally disseminate outstanding research papers on innovation sector in regional dimensions. Being an online periodical, the Regional Innovations is also a forum for exchange of imaginative ideas readers wish to share. Contributions of articles on innovations sector and your comments about this issue are very welcome.

To this end, if you lead, represent, or are a member of any such organisation, please contact us to offer your support and commit to promoting the Regional Innovations as a publication outlet for research undertaken by your experts.

We do hope you enjoy and benefit from the Regional Innovations! And many thanks for staying with us in 2018!

Jean-François Devemy
Editor-in-Chief

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**INSTITUTE OF MANUSCRIPTS NAMED AFTER
MUHAMMAD FUZULI OF ANAS: ONE OF THE
GREATEST WONDERS OF HUMAN HAND**

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Abstract

Institute of Manuscripts named after M.Fizuli of ANAS (former Fund of Manuscripts) was established in 1950 on the basis of the department of manuscripts in the Institute of Literature named after Nizami as a unit center on collection, systematization, preservation and publication of the medieval Oriental written monuments. It is the single scientific-research centre in Republic in the field of scientific and theoretical analysis and teaching of manuscripts, unique and valuable editions distinguished by their anciently and having historical importance. In the Institute of Manuscripts there are rich and rare collections covering all fields of medieval sciences - medicine and astronomy, mathematics and mineralogy, poetics and philosophy, theology and jurisprudence, grammar, history and geography, prose and poetry in Azerbaijani, Turkish, Arabic, Persian and other languages. More than 40 manuscripts were collected here. Precious works on science and culture of near and Middle East, North African countries and peoples in Turkish, Arabic, Persian and other languages are preserved in the foundation. In the meantime, personal documents of scientists and cultural figures of Azerbaijan who lived in the XIX-XX century, old printed books, newspapers and magazines of the previous periods, various microfilms and photo copies are also maintained at the Institute. The oldest manuscript maintained in the Institute of Manuscripts is Surah An-Nisa written on parchment in the IX century.

Key words: manuscript, Azerbaijan, Academy of Sciences, collection.

One proverb says that nobody can remove the writing. In fact, here the writing means the foreordination of God. But it is impossible to remove the things written by human hand on different objects, too, because this writing is contributed by divine creativity and is one of the good examples of human being's creative power!

While the first big step of mankind towards intellectual evolution was creation of the word, the second one was invention of writing. The writing is also the biggest miracle created by human hand. Therefore, this miracle is called "manuscript".

We don't know what kind of material had been initially used to engrave the manuscripts; but the first manuscript which survived to our time had been engraved into the stone, for the stone is more resistant and durable than other materials.

As the time went by, the people's demand for writing increased and the writing which took much time to be engraved into the stone couldn't meet this demand. Therefore, our ancestors began to use other materials- clay tablets, tanned leather, and papyrus for faster writing techniques; finally they invented paper which is the latest achievement of the writing techniques. No wonder, most of the valuable manuscripts currently preserved in many

libraries and manuscript funds of the world had been immortalized on paper. One of such rich manuscript funds is the Institute of Manuscripts named after Muhammad Fuzuli of the Azerbaijan National Academy of Sciences.

This unique institute was founded on the basis of the Department of Manuscripts of the Institute of Literature named after Nizami of Azerbaijan National Academy of Sciences in 1950 as the joint center for collection, filing, preservation and publication of the medieval written monuments of Near and Middle East on various scientific and artistic fields, and it was called the Republic Manuscript Fund till 1986.

Building of the institute which is considered as a fine architectural model was constructed and put into operation by the order of the famous Baku philanthropist Haji Zeynalabdin Taghiyev in the years of 1898-1901. The key aim of Taghiyev related to construction of this building was to establish an educational institution for the girls in Azerbaijan. So, the foundation of women's secular education was firstly laid in Muslim East at this building and "Girls Seminary" started operating in 1901.

In the years 1918-1920, the parliamentary of Azerbaijan Democratic Republic and afterwards the school and Supreme Soviet of the USSR located in this building. In 1950, it was decided to create "Republican Manuscripts Foundation" based on the "The Department of Manuscripts" of Institute of Literature of Academy of Sciences. Afterwards, in 1986, at the initiative of Heydar Aliyev, Institute of Manuscripts was established at the base of this foundation.

More than 40 manuscripts were collected here. Precious works on science and culture of Near and Middle East, North African countries and peoples in Turkish, Arabic, Persian and other languages are preserved in the foundation. In the meantime, personal documents of scientists and cultural figures of Azerbaijan who lived in the XIX-XX century, old printed books, newspapers and magazines of the previous periods, various microfilms and photo copies are also maintained at the Institute.



The oldest manuscript maintained in the Institute of Manuscripts is Surah An-Nisa written on parchment in the IX century.

Moreover, a copy of the manuscript of the work written by the well-known lexicographer Ismayil al-Jovhari in the X century and taken from autograph copy in 1117 is considered as one of the masterpieces of the Foundation. The copies of works such as "Medical Laws" of Abu Ali Ibn Sina, "About Surgery and surgical tools" and "The thirtieth treatise" of Abul-Gasim az-Zahravi, "Food-stuffs of Nizamshah", "Gulshani-raz" of Sheikh Mahmud Shabustari, "Divan" of Nasimi, "Bustan" of Sadi copied in the XII-XV centuries are the most ancient manuscripts preserved at the Institute of Manuscripts. Some of these manuscripts included in "Memory of the World" Register of UNESCO in 2005 are distinguished by their uniqueness. So, the manuscript of the work "Food-stuffs of Nizamshah" written by Rustam Jurjani does not exist anywhere except Baku.



The first native monuments are of special importance among those protected in the Institute of Manuscripts. The most valuable manuscript copies works such as "Varga and Gulshah" written by Yusif Maddah, "Yusif and Zuleykha" by Suli Fagih are maintained in the Institute.

Along with antiquity, the manuscripts in the foundation draw attention with diversity of topic and multidisciplinary. Thus, all the shades of scientific palette of medieval period, in other words, materials related to all scientific fields have been reflected here.

Institute is the single scientific-research centre in Republic in the field of scientific and theoretical analysis and teaching of manuscripts, unique and valuable editions distinguished by their ancestry and having historical importance. Fundamental scientific research on is carried out here on manuscript studies, palaeography, source-study, textual criticism and book science are carried out here by the experts. Highly-qualified specialist working at the institute have made great strides in the field of detection, investigation and bringing to the country of the manuscripts relating to Azerbaijan, but protected in different countries of the world. Finding out of hundreds of manuscripts pertaining to people's

culture, history, science and music as a result of scientific researches carried out libraries and museums of the United States, Italy, Vatican, France, Germany, England, Egypt, Turkey, Iran and other countries due to close support of Heydar Aliyev Foundation under the leadership of Azerbaijan's first lady, UNESCO and ISESCO Goodwill Ambassador Mehriban Aliyeva and their bringing to Azerbaijan in different form-factors and information carriers are the achievements of Institute of Manuscripts. Due to external reasons, Foundation of the institute is closed for public view. As in the international practice, it is restricted to be in direct contact with the materials in order to protect the manuscripts against outside biological and physical intervention, external influence and damage. Only the Institute staff and in necessary cases, the field experts are allowed to directly work with the manuscripts in the foundation. Such problems have been taken into account in the "State Program on the use of Azerbaijani language in accordance with the requirements of the time in the context of globalization and the development of linguistics in the country" approved by Ilham Aliyev with the Order dated on April 9, 2013 and creation of "Electronic library of manuscripts" and internet portal has been put forward as a goal. Currently, the employees of Institute electronize the manuscripts preserved in the foundation using information and communication technologies and transfer them to the internet-portal.

General public have the opportunity for getting acquainted with the various ancient manuscript copies through Exposition hall which you visit. Each year more than 1000 guests visit the exposition of the Institute and familiarize with different manuscript exhibits. The manuscript copies of works written by the outstanding scientific and cultural figures such as Nur Alishah Isfahani, Nakhshavi Ziyaaddin, Ibrahim Haggi, Abu Jafar Ibn Mahammad Tabari, Mahammad Fuzuli, Seyid Mahammad Urfi Shirazi, Bavaziji, Ahmad Nadim, Abdurrahman Jami, Omar Khayyam Nishapuri, Amir Khosrov Dahlavi, Hafiz Shirazi, Saib Tabrizi, Assar Tabrizi, Nasraddin Tusi, Mahsati Ganjavi, Alishir Navai, Mirkhond Mahammad ibn Khavandshah, Seyid Azim Shirvani, Abbasgulu Agha Bakikhanov and other are demonstrated the Exposition hall opened in 1982.

Periodic renewal of exhibits helps to protect the attention and interest of the visitors. Generally, publicization of achievements on popularization of science, as well as

studying and investigating of ancient manuscripts are one of the priorities for the Institute. Therefore, along with the published books and magazines, bringing the success of science of manuscript studies in Azerbaijan to the attention of the world scientific community through the international organizations that it is a member are principal components of international relations of the Institute.

As we know, the first examples of Azerbaijani miniature art were created in Tabriz and Maragha cities in the XIII – XIV centuries. Tabriz miniature school was formed as a full independent art school in the XV century and significantly influenced to the development of (Heart, Shiraz) miniature school. The most prominent calligraphers and artists of the period Sultan Mahammad, Mir Musavvir, Mirza Ali Tabrizi, Mir Seyid Ali, Muzaffar Ali, Mahammadli, Sadig Bay Afshar, Siyavush bey, Mir Zeynalabdin and others worked in art workshops operating in Tabriz at the beginning of the XVI century and Gazvin in the second half of the century as well as created exquisite miniature manuscripts.

Among the manuscript books protected at the Institute of Manuscripts we can come across some miniature paintings which draw attention from the point of artistic value. Miniatures drawn to "Khamsa" written by Nizami, "Hadigatul-hagayig" by Sanani, "Hasht behisht" poems of Khosrov Dahlavi, divans of Hafiz, Fuzuli, Urfi, Amin Shahi school, work of "Nushafarin and Govhartaj" stand out especially in terms of mastership. These drawings mainly pertain to Tabriz miniature school.

Institute of Manuscripts are expanding their relations with a number of foreign country organizations.



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TECHNOLOGIES DES REGISTRES DISTRIBUES ET BLOCKCHAINS: DANGEREUX EFFET DE MODE, MORT DE L'AUTORITE PUBLIQUE OU COEUR DE LA 4EME REVOLUTION TECHNOLOGIQUE?

DLT¹ et Blockchains : dangereux effet de mode, mort de l'autorité publique ou cœur de la 4ème révolution technologique? Notes prises à l'occasion du premier forum de l'OCDE consacré aux politiques de blockchain, «opportunités et défis des registres distribués».

DLT (distributed ledger technologies) and Blockchains: dangerous fashion effect, death of the public authority or heart of the 4th technological revolution? Notes from the first OECD Forum on Blockchain Policies, «Opportunities and Challenges of Distributed Registries».

Résumé

Cet article aborde la question de la sécurité des transactions électroniques fondées sur la technologie des registres distribués et des chaînes de blocs en prenant appui sur les interventions délivrées à l'OCDE les 4 et 5 septembre 2018. Après avoir rappelé en termes simplifiés les principes dominants des registres distribués, des chaînes de blocs et des cryptomonnaies, l'article brosse à grands traits les principaux avantages liés à ces nouvelles technologies, évoque ses limites et ses risques, mentionne quelques unes des nombreuses applications possibles dans divers domaines de la puissance régaliennne essentiellement: identité, immigration, transport, élections, frontières et coopération transfrontalière. Les questions financières et fiscales ont été délibérément laissées de côté. L'article s'interroge sur l'intérêt de ces technologies pour les ministères de puissance régaliennne. Il tente enfin de trancher entre l'effet de mode et la révolution que représentent ou peuvent représenter ces technologies.

Abstract

This article addresses the issue of the security of electronic transactions based on distributed ledgers and blockchain technology, based on interventions issued to the OECD on September 4 and 5, 2018. After recalling in simplified terms the dominant principles of distributed ledgers, block chains and cryptocurrencies, the article broadly outlines the main advantages linked to these new technologies, evokes its limits and its risks, mentions some of the numerous applications in various fields of sovereign power, essentially: identity, immigration, transport, elections, borders and cross-border cooperation. Financial and fiscal issues have been deliberately left aside. The article wonders about the interest of these technologies for the ministries of sovereign power. It finally tries to decide between the fashion effect and the revolution that represent or can represent these technologies.

Mots clés: blockchain, technologie, coopération transfrontalière, transactions électroniques, registres distribués, cryptomonnaies.

Key words: blockchain, technology, cross-border cooperation, electronic transactions, distributed ledgers, cryptocurrencies.

¹ «distributed ledger technologies» - «technologies des registres distribués» selon la traduction du rapport blockchains de France Stratégie de juin 2018.

L'OCDE organisait les 4 et 5 septembre dernier, pour la première fois, un séminaire consacré aux politiques relatives aux registres distribués en général et aux chaînes de blocs en particulier. («OECD Blockchain Policy Forum Distributed Ledgers: Opportunities and Challenge»). Occasion de s'interroger sur l'intérêt et les limites de ces nouvelles technologies de cryptage et de sécurisation des transmissions de données.

1. DLT, blockchains, cryptomonnaies: en termes simples, de quoi s'agit-il?
2. Les opportunités et les conséquences.
3. Les risques et les limites.
4. Exemples d'application: lutte anti-corruption, immigration, transport, élections, frontières et coopération transfrontalière.
5. Quel rôle pour l'Etat, et en particulier pour le ministère de la puissance régaliennne et de la force publique par excellence?
6. Conclusion: mode ou révolution?

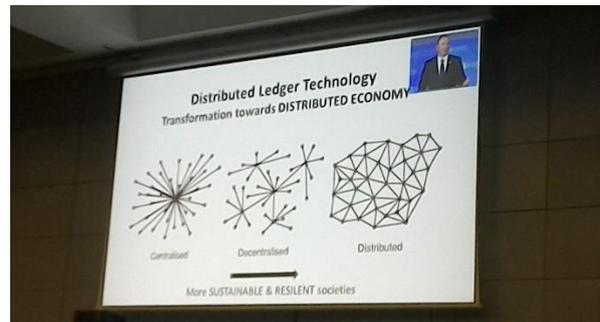
1. DLT, blockchains, cryptomonnaies: en termes simples, de quoi s'agit-il ?

Difficile pour le profane de se faire une idée de la nature de ces technologies connues essentiellement au travers du phénomène des «bitcoins», cryptomonnaie accusée de favoriser le développement de circuits monétaires criminels ou frauduleux au détriment des Etats et des partisans de l'ordre établi, tout en menaçant les ressources naturelles de destruction par une incroyable débauche de dépense d'énergie (les transactions en bitcoins consommeraient à elles-seules en une année autant d'électricité que l'Irlande dans son ensemble ou quatre centrales nucléaires).

Au risque de simplifier outrageusement, on dira que ces technologies consistent à répartir et disséminer les risques de distorsion afin de limiter, voire supprimer, les risques de corruption de l'information. Un seul fichier central, fut-il le mieux protégé du monde, ou une seule plate-forme d'échange courent toujours le risque d'être attaqués de l'extérieur ou corrompus de l'intérieur. En répartissant, non l'information elle-même mais l'image de ces informations, et en garantissant l'intégrité de cette image par des circuits multiples interconnectés, on acquiert la certitude que l'information d'origine n'a pas été corrompue. C'est, mutatis mutandis, la technique Berthier, du nom de ce maréchal, chef d'état-major de Napoléon, qui aurait eu coutume de transmettre les ordres par plusieurs estafettes différentes afin d'en garantir la réception et le contenu.

² Connue pour être le premier chef de gouvernement féminin à reconnaître son homosexualité dans un pays sociologiquement conservateur, Ana Brnabic est jeune (née en 1975), a étudié aux Etats-

Avec les DLT et les blockchains, l'information, les plateformes d'échange, ne sont plus isolées et distribuées «en silos», mais réparties entre de multiples acteurs connectés ou connectables entre eux comme illustré dans cette diapositive:



Ajoutons que d'un point de vue technique, il ne faut pas confondre les termes et les concepts pour ne pas jeter le bébé avec l'eau du bain: les bitcoins sont une forme de cryptomonnaie – il en existe d'autres, comme Zecash, qui ont d'ailleurs maintenant la préférence des trafiquants en raison du niveau croissant de surveillance et de traçabilité des transactions en bitcoins. Les cryptomonnaies sont elles-mêmes une forme d'utilisation des blockchains. Et les blockchains ne sont enfin qu'une forme d'application de la technologie des registres distribués (distributed ledgers).

2. Les opportunités et les conséquences

Les DLT et blockchains (DLT/BC) sont donc utilisables pour toute transmission sécurisée de données ou plus exactement pour garantir que la donnée transmise correspond bien à la donnée initiale. Elles ne transmettent pas l'information elle-même, mais son «empreinte digitale».



Diego ZALDIVAR, directeur général de RSK LAB: «Les Blockchains, ce sont des empreintes digitales, pas des bases de données».

Certains, comme le Premier ministre Serbe Ana Brnabic², y voient une technologie disruptive émergente au cœur d'une quatrième révolution industrielle où les pays qui

Unis, et était précédemment ministre de l'administration publique et des collectivités locales.

auront pris le tournant à temps pourront se faire une nouvelle place dans l'ordre mondial. Peu de responsables politiques ont conscience, selon elle, de l'ampleur des changements en cours. Elle envisage de fonder le registre gouvernemental d'identité sur les technologies DLT/BC, et pense que l'usage des technologies DLT/BC pourrait favoriser une évolution de l'état d'esprit dans l'Administration, passant d'un modèle fondé sur le « nous savons ce qui est bon pour vous » et « vous avez besoin de nous » à un état d'esprit de service à la population.



le Premier ministre Serbe Ana Brnabic à l'Administration: «détendez-vous et mettez-vous au service de la population» («relax and serve the people»).

Les chefs de gouvernement de l'île Maurice ou des Bermudes appuient également le développement des DLT/BC dans leurs pays respectifs (création d'une université mauricienne dédiée à l'IA et aux DLT/BC, intérêt soutenu aux Bermudes pour maintenir son rôle de leader et de captation de capitaux dans les services financiers et le domaine des assurances).

Le champ des domaines économiques et administratifs susceptibles de s'appuyer sur ces technologies est vaste et pratiquement illimité (cf exemples d'application ci-dessous).

3. Les risques et les limites

L'enthousiasme semble de mise pour ces nouvelles technologies comme il l'a été par le passé pour les PPP (public private partnership). Les mêmes qui nous «vendaient» hier les vertus «gagnant-gagnant» du PPP (anglo-saxons, grands groupes privés), même si pour l'instant les «GAFA» ne sont peut-être pas encore tout à fait leaders sur ce nouveau marché (Microsoft était

cependant représenté à ce forum), promeuvent aujourd'hui DLT et blockchains.

Certaines limites ou risques ont été évoqués : les délais de transaction, qui ne sont pas aussi courts qu'avec d'autres technologies, [débauche de moyens qui renforce les coûts et les délais] les coûts (coût en énergie d'abord, bien que ceux-ci ne soient extrêmement sensibles que pour les bitcoins selon plusieurs interlocuteurs, mais aussi coûts d'accès à la technologie qui exclut de fait les ONG par exemple selon le Pm de l'île Maurice).



Perianne Boring (fondatrice du lobby «chambre du commerce électronique» en 2014 à Washington). «la dépense d'énergie liée aux BC n'est pas gâchée, c'est une contribution à la cybersécurité».

La mise en place de systèmes décentralisés indépendants peut menacer les monopoles ou les oligopoles, à commencer par ceux des Etats eux-mêmes, et de puissantes plate-formes de services comme Uber pourraient être elles-mêmes mises en concurrence et finir par être à leur tour «ubérisées». L'absence de responsable identifié en cas d'escroquerie ou de réalisation d'un risque est aussi tout autant une menace qu'un avantage. Les systèmes de DLT mis en place par les Etats présenteraient de meilleures garanties que les systèmes privés.



Marta Piekarsaka, director of ecosystem, hyperledger: les bitcoins sont gourmandes en énergie, la question n'est pas aussi significative pour les autres applications de blockchains ou de registres distribués.

Enfin l'équilibre des forces sur ce marché émergent n'est pas encore bien défini ni identifiable : s'agit-il du cheval de Troie des libéraux anglo-saxons partisans du moindre

Etat, ou les entreprises et les Etats européens et Français y ont-ils encore leur place et des perspectives?

On notera en tout état de cause que nombre d'intervenants spécialisés s'abstiennent de présenter les DLT/BC comme l'unique solution au développement des transactions électroniques: elles existent aujourd'hui parmi d'autres, leur intérêt est certain mais elles présentent encore des «trous» et des risques et ne sont pas forcément la seule solution incontournable. Les technologies parallèles ou concurrentes n'ont guère été évoquées mais on peut retenir l'existence des «token» (systèmes d'authentification par «jetons» plus fiables que les simples mots de passe et identifiants alphanumériques), les techniques de «hash» (transmission d'une image technique permettant de déceler d'éventuels changements dans les données d'origine) ou le fait que les échanges fondés sur les technologies traditionnelles des cartes de crédit sont incommensurablement plus rapides et moins gourmands en ressources, notamment énergétiques. Différentes technologies peuvent en outre être combinées.



Salem AVAN, chef du service de gestion de l'information aux Nations Unies: Les DLT/BC sont une technologie nouvelle, émergente, en cours d'évolution pas simple du tout. La technologie évolue, la réglementation aussi mais moins vite. Le risque lié à l'absence de basculement vers les DLT/BC est limité, mais cette technologie permet de travailler mieux.

4. Exemples d'application: identité, lutte anti-corruption, immigration, transport, élections, frontières et coopération transfrontalière.

L'essentiel des ateliers organisés tout au long de ces deux journées était consacré à l'illustration par l'exemple des multiples applications possibles : assurances, fiscalité, lutte anti-corruption, impôts, transport, élections, identité, etc.

Au fil des échanges, on retiendra surtout que l'association des DLT/BC aux «smart contracts» - contrats intelligents, accords quasi-automatiques accélérant les échanges, par exemple accord automatique de paiement lorsqu'un usager utilise un véhicule en usage partagé – est à la base de nombreux développements potentiels.

Identité: la base de toutes les autres applications. Mais aussi des questions de réputation et de vie privée.

L'un des intervenants a mentionné l'anecdote de son arrivée à Londres avec un passeport étranger. Voulant acquérir un téléphone, il s'est vu refuser le passeport comme preuve d'identité et exiger une adresse. Essayant alors de louer un appartement, il s'est vu exiger un compte bancaire. Et voulant ouvrir un compte bancaire s'est vu exiger une adresse. Cette anecdote souligne l'impérieuse exigence d'une identification garantie et reconnue comme base de tous les services.

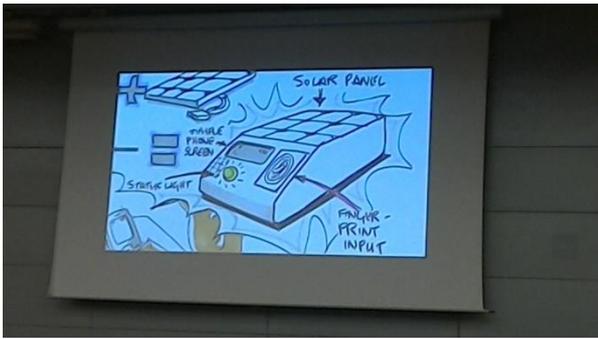
Entre un milliard et 1,5 milliards d'individus dans le monde n'auraient pas d'identité certifiée ou reconnue. Deux milliards n'auraient pas de compte bancaire. Leur niveau d'accès aux services (finances, assurances..), au vote ou même au marché du travail sont dès lors limités et l'on voit se développer ou s'aggraver un système à double standard dans tous les domaines.

Les registres distribués et blockchains peuvent répondre à ce besoin d'identification certifiée tout en permettant à chaque individu de regagner du contrôle sur son identité, sa réputation et les informations attachées à sa personne qu'il souhaite partager ou contrôler en fonction de leur diffusion.

Immigration: identification indispensable.

Une table ronde spécifiquement consacrée aux questions d'immigration a permis de présenter notamment le programme de l'ONU ID2020, visant à attribuer une identité à l'ensemble de la population, ou les systèmes d'identification et de services aux immigrés organisés par l'Administration finlandaise. Celle-ci réfléchit aussi à la connexion de ce système propre aux immigrés avec un système d'identification généralisé, afin de gommer l'effet de rupture lié au changement de statut lorsqu'un immigré acquiert la nationalité finlandaise.

Une start-up française a présenté un système d'identification automatique fondé sur un boîtier autonome d'enregistrement des empreintes digitales (alimenté par un mini panneau solaire) et permettant aux habitants non identifiés de recevoir ou d'envoyer de l'argent, de payer téléphone et éventuellement électricité. Ou permettant d'établir un «smartcontract» au niveau d'un village et de contrôler et cibler des dons ou soutiens humanitaires en envoyant spécifiquement des dons pour de la nourriture, de l'eau ou des panneaux solaires.



La ID box de Julien Bouteloup: un numéro de téléphone, un panneau solaire, une reconnaissance d'empreinte transmise par une blockchain, qui permet de voter, acheter, payer, recevoir des paiements, enregistrer les propriétés immobilières, s'assurer... jusque dans les villages les plus reculés.

Transport: vers les transports partagés et modulaires.

Un rapport spécifique de l'OCDE sur les transports de demain et les développements possibles liés aux DLT/BC a été commenté et développé en séance (rapport disponible sur le site de l'OCDE). Des exemples de développement ont été présentés en particulier par l'entreprise de conseil Ersnt and Young. Il est clair que la réglementation et l'administration publique doivent se préparer activement à ces changements disruptifs qui vont se produire très vite: voiture autonome, interchangeable, à propriété et usage partagés. La question de la sécurisation de la cartographie n'a pas été évoquée directement.



Le projet Tesseract de Ersnt and Young: déconnexion/fragmentation de la propriété et de l'usage des moyens de transport, chacun possède une part plus ou moins grande d'un véhicule qu'il utilise ou loue en toute sécurité grâce aux blockchains et aux contrats intelligents. Il envisage même de dissocier motrices électriques porteuses et cabines passager ou transport de marchandises.

Lutte contre la corruption: les cryptomonnaies pas si discrètes, pas d'eldorado disruptif pour la délinquance.

La table ronde sur la lutte anti-corruption a permis de constater que les pouvoirs publics n'étaient pas comme on l'a cru, totalement désarmés face aux cryptomonnaies. On y apprend que les transactions sont traçables et que du fait de l'activité accrue des pouvoirs publics dans le circuit des bitcoins, le taux de transactions en bitcoins lié aux trafics et dissimulations en tout genre est passé en quelques années de 30% à 1%. La criminalité se déporte sur d'autres cryptomonnaies qui se développent parallèlement.



Pour Elisabeth ALOI, chef du département des investigations sur le blanchiment d'argent au ministère de la justice des Etats-Unis, la criminalité en cryptomonnaie n'est ni différente par nature ni plus importante qu'en dollars ou en euros. Elle s'ajoute simplement aux moyens traditionnels.

Élections: une nouvelle crédibilité pour les élections à distance.

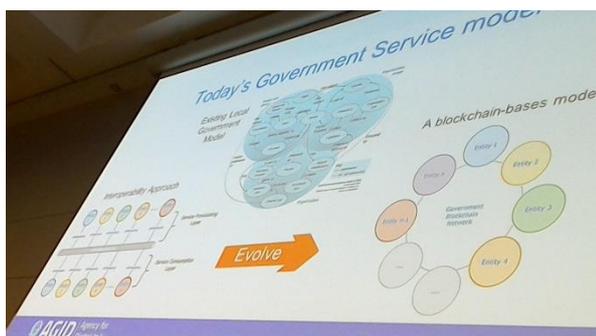
Le niveau de sécurité disponible avec les DLT/BC permet d'envisager sérieusement de recourir au vote électronique et même au vote à distance. L'Ile Maurice, la ville de Zug en Suisse, envisagent d'y recourir, et cette technologie a été utilisée pour le vote à distance à l'occasion des primaires en Virginie de l'Ouest aux Etats-Unis. L'Estonie, malgré son degré d'avancement en matière d'administration électronique, a reculé pour l'instant devant cette évolution pour des raisons psychologiques (défiance de la population, crainte de manipulations).



Kristo VAHER, nouveau chef du bureau des données du gouvernement estonien : pas encore d'usage des DLT/BC pour les élections même si c'est possible techniquement.

Autres usages, cartographie et systèmes d'information géographique.

Il serait trop long et impossible de mentionner les autres usages évoqués ou non au cours de ce colloque. En ce qui concerne la cartographie, les systèmes d'information géographique et la coopération transfrontalière, on relèvera que la Suède est déjà en train de transcrire son cadastre à l'aide des DLT/BC, de même que le Ghana, la Géorgie, le Kenya, le Honduras certains Etats américains. Le représentant Italien de l'agence pour l'Italie numérique, Petro MARCHIONNI, retrace les efforts italiens de développement du recours aux DLT/BC depuis deux ans mais souligne quant à lui la difficulté d'une coopération transfrontalière lorsque les mêmes systèmes ne sont pas adoptés des deux côtés de la frontière.



Italie: vers un modèle partagé de preuve d'autorité. Mais le système fonctionne sur la confiance et lorsque toutes les parties prenantes y sont présentes, ce qui freine la coopération transfrontalière.

5. Quel rôle pour l'État, et en particulier pour les ministères de l'intérieur ou leur équivalent, ceux de la puissance régalienne et de la force publique par excellence ?

Il est clair aujourd'hui que les DLT/BC n'ont pas signé l'arrêt de mort des Etats et de la puissance publique comme on aurait pu le craindre initialement. Son implication est au contraire plus que jamais nécessaire pour ajouter une couche de sécurité à un système technique de sécurité.

Les ministères de l'intérieur, garants de la sécurité dans de nombreux domaines, ne peuvent ignorer l'importance de la technologie des registres distribués et des blockchains pour les missions régaliennes qui les concernent directement : garantie de l'identité tout d'abord, mais aussi des droits qui y sont attachés : permis de conduire, droit de vote, droit de voyager, de chasser, etc.

D'autres domaines connexes peuvent s'y adjoindre dans le cadre d'une évolution rapide de la société numérique: droit à la protection de la vie privée, organisation des secours, droit de la circulation, garantie des informations

géographiques régaliennes (frontières internationales et internes, limites des infrastructures publiques, association identité et localisation géographique fixe ou mobile).

6. Conclusion: mode ou révolution?

Il serait tentant de répondre à cette question par une pirouette : les DLT/BC sont manifestement à la fois une mode et une révolution. Une mode, parce qu'elles ne sont peut-être pas la réponse unique ou idéale aux questions de sécurité qu'elles tendent à résoudre, et qu'il y a encore des trous dans ces technologies émergentes et en pleine évolution. Mais aussi une révolution, parce qu'elles obligent à repenser les structures même de la sécurité et des institutions publiques. Il reste, de toute évidence, une interrogation sur les gagnants potentiels d'un développement de ces technologies au détriment des autres. Le marché serait aujourd'hui aux mains de 50 ou 60 start-ups réellement actives, les « GAFA » ne seraient pas encore les maîtres du jeu. Mais il est bien difficile de déceler aujourd'hui les véritables enjeux et influences à la lutte en sous-main. Le jeu est peut-être ouvert mais rien n'est moins sûr. Il ressort de cette conférence un sentiment de sous-représentation Française (présents par quelques start-ups isolées seulement mais pas au niveau institutionnel) ou allemand (totalement absents ou peu s'en faut) contre un sentiment de surreprésentation américaine (les USA financent 20% du budget de l'OCDE) et anglo-saxons ou pro anglo-saxons (pays de l'Est largement sous influence anglo-saxonne, comme le Pm serbe qui est un produit de l'université américaine).



Chris Sharrock, ambassadeur du Royaume Uni près l'OCDE.

Il est urgent en tout état de cause de jeter un regard approfondi sous le double angle politique et technique sur ces technologies et d'arrêter puis de mettre en œuvre une stratégie à cet égard. La Suède, la Colombie, le Kenya ont déjà adopté une politique gouvernementale relative à l'intelligence artificielle et aux chaînes de blocs. L'ambassadeur du Royaume Uni auprès de l'OCDE, de concert avec les autres intervenants (SG OCDE, ambassadeur du Mexique auprès de l'OCDE, Pm Maurice, Serbie, Bermudes), insiste sur cette nécessaire réconciliation du technique et du politique sur ce thème. La France n'a pas encore de stratégie officiellement

déterminée mais le rapport de France Stratégie [organe de réflexion et d'impulsion rattaché au Premier ministre] de juin 2008, mentionné en annexe, prétend à ce rôle en indiquant dans son préambule les 7 pistes d'action à suivre.

Annexe 1. Enjeux des blockchains

Rapport
Publié le
Jeudi 21 juin 2018

La technologie blockchain promet des transactions programmables sans intervention d'un tiers de confiance. Le potentiel disrupteur d'une telle innovation appelle une stratégie publique alliant régulation et soutien à l'innovation... sans attendre.

Certains y voient l'innovation disruptive qui annonce «l'entrée dans une ère de l'efficacité et de la confiance partagée», d'autres une technologie réservée aux geeks qui pourrait nourrir la prochaine bulle spéculative. Une chose est sûre, la blockchain est aujourd'hui à l'agenda de tous les décideurs. Car cette technologie numérique qui permet de transmettre des données de manière décentralisée, sécurisée, transparente et sans intermédiaire peut virtuellement bouleverser des pans entiers de la «vieille économie», à commencer par la logistique. Certains pensent même qu'elle pourrait «uberiser Uber» ! Ce rapport issu du groupe de travail présidé par Joëlle Toledano, professeure émérite d'économie à l'université Paris-Dauphine, a le mérite de faire le point : quels sont les *vrais* enjeux de la blockchain à ce stade et comment l'action publique peut-elle accompagner son passage de l'expérimentation à la maturité, en combinant régulation et soutien à l'innovation ?

I. La blockchain, c'est quoi ?

Esotérique. C'est le mot qui revient le plus souvent en réaction à la lecture d'un article sur la blockchain ! Ce rapport a aussi une vocation pédagogique. Commençons donc par le commencement : la définition. «Il s'agit d'une nouvelle façon de stocker de l'information, de la préserver sans modification, d'y accéder et d'intégrer de nouvelles informations qui deviennent infalsifiables. Ces nouvelles données peuvent résulter de l'exécution d'une opération, d'une transaction ou de l'exécution «automatique» d'un programme informatique. Elles sont inscrites sur l'équivalent d'un vaste registre «distribué», c'est-à-dire partagé par tous les membres du réseau, un système qui permet transparence et auditabilité».

On comprend donc bien que partout où se trouve un intermédiaire – même une plateforme – ou dit autrement un tiers de confiance qui contrôle ou certifie une transaction entre personnes, la blockchain peut modifier la donne. Une

révolution virtuelle pour les secteurs de la banque, des assurances, le notariat... et surtout la logistique, considérée comme «premier candidat». «En tant que registre mémorisant sans possibilité de falsification toutes les opérations effectuées, la blockchain pourrait se révéler un outil révolutionnaire en matière de logistique. C'est tout le cycle de vie d'un produit qui peut être ainsi certifié », souligne le rapport. Plus largement, le rapport voit dans les promesses de la blockchain deux familles d'usages opérationnels à moyen terme : «les applications de type notarial liées à la tenue d'un registre partagé» – du cadastre numérique à la traçabilité des médicaments – et «les smart contracts», des programmes informatiques conçus pour exécuter les termes d'un contrat (d'assurance par exemple) de façon automatique.

On est donc loin d'un phénomène circonscrit aux cryptomonnaies, Bitcoin en tête ! «La blockchain ne doit pas être considérée comme cantonnée au monde de la finance », insiste le rapport. En témoigne, s'il fallait une preuve de plus, la diversification des levées de fonds en actifs numériques (dites ICO pour *Initial Coin Offering*) observable depuis 2017, notamment vers les secteurs des médias, de la santé, des jeux et de l'internet des objets.

II. De sérieux freins

Limite : «les cas d'usage réellement opérationnels sont rares» souligne le rapport. Pourquoi ? Il y a d'abord des freins de nature «technique». Un exemple pour s'en convaincre : le réseau Bitcoin traite une poignée de transactions par seconde, contre plusieurs milliers pour un opérateur de carte bancaire. «Le mécanisme de validation historique de la blockchain, avec ses procédés cryptographiques, est source de lenteur». Un changement d'échelle semble donc en l'état problématique. Autres limites techniques : la consommation en électricité des opérations de cryptographie (énorme), la question de l'identité électronique des biens ou des personnes dont la blockchain enregistre les transactions ou tout simplement celle du «choix du protocole de consensus», c'est-à-dire des modalités d'accès à la blockchain.

Deuxième type de limites listées par le rapport : celles qui touchent aux enjeux monétaires et financiers. Il existe aujourd'hui 1 500 cryptomonnaies bâties sur des blockchains pour une capitalisation totale supérieure à 300 milliards d'euros, mais toujours pas de réglementation pour endiguer leur dimension spéculative (comme il en existe typiquement pour les marchés financiers). Or, blockchain et cryptomonnaies sont difficilement séparables puisque les opérations de validation qui sécurisent le réseau sont «rémunérées» par émission d'actifs numériques. D'où l'idée dans le débat d'une monnaie digitale de banque centrale qui donnerait aux cryptomonnaies le soutien institutionnel nécessaire, légal et budgétaire. «Les cryptomonnaies se signalent aussi par leur capacité à permettre les paiements frauduleux (drogue, armes, blanchiment) ou l'évasion fiscale», rappelle le rapport. De là des enjeux sécuritaires

évidents au-delà même des questions de cybersécurité habituelles (protection contre le piratage).

Reste la question juridique et fiscale. Puisque la blockchain revendique une fiabilité totale sans intervention d'un tiers de confiance, les certifications qu'elle enregistre doivent avoir une portée probatoire avérée. À défaut «d'un droit de la preuve de type blockchain», l'insécurité juridique risque de freiner le développement de la technologie. Même défaut de réglementation côté fiscal : «la nature juridique des actifs numériques reste imprécise» – ce qui explique notamment que les établissements bancaires refusent de gérer les comptes des entreprises ayant des cybermonnaies à leur patrimoine – ; il manque «une politique fiscale claire et adaptée aux cryptomonnaies».

III. Sortir la blockchain «du bac à sable»

C'est l'expression utilisée par les startuiseurs pour dire qu'il est temps de passer de l'expérimentation au développement à grande échelle. Une révolution qui nécessite de lever *tous* les freins identifiés par le rapport et ce, sans attendre l'arrivée à maturité de la blockchain: «la plupart des acteurs sont aujourd'hui disposés à entrer dans une nouvelle phase, celle d'une intervention des pouvoirs publics pour fixer un cadre juridique et réglementaire qui permette le plein essor de cette nouvelle technologie», note le rapport.

De là, sept recommandations issues du groupe du travail «qui doivent être considérées comme de premières orientations au niveau national». D'abord promouvoir des travaux de recherche et développement interdisciplinaires notamment dans les domaines de la formalisation, la sécurité (intégrité,

confidentialité, preuves, opposabilité), la qualité de service (bande passante, latence, robustesse, fiabilité) et la gouvernance (évolution, neutralité). Ensuite : développer la formation, sans se cantonner aux spécialistes, c'est-à-dire aller au-delà de la nécessité de former de (bons) développeurs, en investissant aussi dans l'appropriation des systèmes complexes, condition nécessaire au développement des usages. Règles fiscales et comptables, statut juridique des jetons, valeur de preuve d'une inscription sur une blockchain, lutte contre les usages illicites... il faut également instituer «des régulations de base qui soient raisonnablement attractives». Une nécessité pour soutenir les applications légales. Le rapport recommande enfin de contribuer au financement des projets d'infrastructure logicielle pour construire «les infrastructures blockchain publiques de demain», de soutenir des secteurs d'excellence ou d'intérêt stratégique en France – logistique, lutte contre la contrefaçon, traçabilité, banque et assurance, santé –, et de tester, expertiser, former et équiper au sein des pouvoirs publics, en développant notamment une cellule d'agents publics ayant une expertise dans le domaine des blockchains, capables d'intervenir en appui des services de l'État. Pour finir, le rapport insiste sur l'urgence à répondre aux défis auxquels se heurte l'internet de la valeur, ce qui suppose une monnaie numérique suffisamment stable pour servir de contrepartie aux transactions.

Dix ans après l'apparition du Bitcoin, force est de constater que la technologie blockchain n'a pas atteint sa maturité et que les écueils sur sa route ne manquent pas. Mais attendre qu'une innovation soit éprouvée pour se lancer, c'est prendre le risque de partir trop tard. Ce rapport vient nous le rappeler.

Céline Mareuge, *journaliste web*

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INNOVATIVE TECHNOLOGIES IN 21ST CENTURY EDUCATION

Abstract

The main objective of this article is to provide an overview on the newest approaches in 21st century education methods. The research gives a definition of innovative technologies in education as well as describes novel types of education. It describes the importance of online education and studies the advantages of various types of online education. The article also gives an overview on the Chinese language online course called MyChinaMania.

Key words: *innovative approaches in education, innovative technologies in education, online education, online course, virtual reality.*

In the 21st century, internet and technology are developing at an incredible speed, making a profound effect on different areas of life, replacing old methods of work and introducing new ones. One of the areas that have undergone significant changes over the past 3-5 years and that is expected to be further changed in the next couple of years is education. Education has not only become very computerized but, along with the transition of the business from offline to online, has created an incredible mix of the latest technology with the newest teaching methods.

Online education is now at its peak of popularity. Nowadays even the most famous universities have platforms where they upload their lectures for their students all over the world.

Distance learning has existed for a long time. People used to study with the help of TV programs or study with mail order material. However, such training had a big shortcoming: the lack of feedback. In the very beginning of the 21st century, with the popularization of the Internet and programs that allow you to establish video communication, studying through video calls such as Skype gained huge popularity. Nevertheless, in this case, there still was a flaw: both the teacher and the student depend on each other's time schedule. Therefore, video online courses that can be viewed at any convenient time gained popularity extremely fast. In

addition, students are not limited to their place of residence anymore, so they can choose any field of education at any place in the world.

In general, there had been some random video lessons on the Internet, but online education started developing actively after 2012 when companies such as Coursera, Udemy, and Udacity started their online learning platforms[2, 3, 4]. Nowadays, online education is one of the most interesting fields of education as well as one of the most novel and profitable types of business.

Advantages of Innovative Approaches in Education

The concept of innovative technologies in education has a particular meaning. It has to be an integration of computer technologies with different areas of study. In other words, it is the use of the latest computer software for a comprehensive study of different educational programs.

Online education is the result of the integration of technology and science. The online learning process is designed for those who are motivated to learn. A good program of distance education is aimed to fully involve and immerse the students in the educational process and further self-education. Online training allows students to immerse themselves in the educational environment as

they watch, finish assignments, consult with the teachers and communicate with their classmates.

One of the advantages of online studying is the individual pace of training. A student can work with the course materials at his/her own speed, while having the opportunity to simultaneously study additional materials from electronic libraries and other sources.

The schedule is flexible, and the materials are available at any time of the day, which solves the issues caused by busy lifestyle and different time zones. Students can still keep up with the group during travel or business trips. The quality and effectiveness of feedback from teachers throughout the learning period are often higher than during offline classes since the teacher can give equal personal attention to each student, which is not possible during offline classes that are strictly limited by time.

From the teacher's point of view there are a few more advantages, such as saving time (no need to waste time traveling to the place of study); the possibility to simultaneously train a large number of students; the ability to quickly scale the business and obtain investments to improve educational methods; reduced the cost of training (no cost for renting premises).

It is easier to constantly improve the quality of teaching methods with the use of the latest tools and technologies. The online course needs to be developed and recorded once, and the teacher does not need to teach each new group the same thing. In return, he/she can spend his spare time on giving good feedback, homework assignments and answer students' questions.

It is also much easier to automatically and quickly monitor the progress of students on the online platforms without spending hours on the evaluation, as is done in traditional forms of education. It is possible to create personal teaching methods that are not supported in traditional educational institutions. For example, the teacher can make shorter but more frequent classes, or control the information learned by limiting the access to further lessons if the student has not finished their current homework assignment or tests.

There are several types of online learning programs that combine different types of learning. The simplest one is chat sessions during which training events are held synchronously for all participants in a chat. It is not the most effective type, though.

Of the best methods in online education is online lessons in the form of lessons, seminars, conferences, workshops etc. During webinars and online master classes students have the opportunity to ask questions live.

One of the newest and most expensive forms of studying is telepresence. This form of training is not yet very

popular due to technical difficulties and high costs, especially in the developing countries. However, training through a robot that replaces a person in the classroom is already being used to train disabled and sick children. These models can be controlled via the Internet; robots can move around in space, observe and talk to people.

Virtual Reality in Education

More often one can see the newest technologies such as virtual reality among the new teaching methods. VR has been introduced in training systems. However, such training is still very expensive. Nowadays, there are still few people who have VR glasses at home and few websites support educational videos in VR. Nevertheless, it is becoming more popular and in the next 2-3 years will become more accessible to random people.

One of the main advantages of virtual reality is its clarity. It makes it possible to show any process taking place in the world or in a living organism at any degree of detail. It can transfer the student anywhere in the world without additional financial costs and risk. Students can do the most life-threatening activities and be in dangerous places. They can even visit the past and see the world through the eyes of a Middle Ages citizen.

Now, there are several formats for lessons using virtual reality. One of the easiest is full-time education when students are in the class with the teacher using VR glasses to study a particular subject. Nevertheless, the formats of distance and mixed education are of great interest recently. During distance learning, students and teachers can be located in different parts of the world, but they can still be present in the virtual classroom at the same time. They can listen to lectures and interact as in real life.

Mixed education is also very interesting because in the long run it can allow some students to attend live classes, which are conducted, for example, by famous universities in other countries, see the teacher and classmates live and even communicate with them.

MyChinaMania Online Course

Online education is very convenient for people who want to develop or learn new skills including foreign languages, even as complex and exotic as Chinese. Due to its complexity, many people are afraid to learn it and do not even know where to start. I have received many requests about the Chinese language, its grammar and methods to learn characters, so I decided to start a project on teaching Chinese language. It keeps pace with globalization, with China's economic development, as well as with the expansion of the boundaries of intercultural communication.

Due to globalization, it is not enough to be just a specialist in your profession anymore. Very often a

professional needs additional knowledge of foreign languages to help with the growth of his/her career. Foreign languages are often needed for those who own businesses, during travel, and in communication with different people.

My project MyChinaMania introduces people to Chinese culture and helps those interested in learning Chinese. It does not teach thoughtless memorizing. Instead, it helps to learn how to speak Chinese consciously and, most importantly, to write and read in Chinese. It is the first Chinese language online course created from a Russian speaking perspective, that includes not only grammar structure and hieroglyphics classes, but emphasizes the differences between Chinese and Russian languages, which often are difficult for students to overcome.

The course is constructed in the way that students not only learn colloquial phrases but also learn a base on phonetics, grammar, and Chinese characters. After four months of a Beginner Chinese course, the students will be able to read, write, and speak on the beginner level, that is up to 700 characters and about 1,000 words.

Such kind of a relatively short term of training disciplines and gives a guarantee that the student will not abandon the course in the middle and that the studying will not be postponed for an uncertain time. If all homework is finished on time during the course, then the result is guaranteed. There will be constant feedback and work on the mistakes between the student and the teacher. Aside from the video lessons, there are additional materials for students.

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CRISIS MANAGEMENT AS A COMPONENT OF PERSONNEL SECURITY

Abstract

Introduction. The risks of imminent danger to the personnel and to the economic security of the enterprise as a whole raise if a crisis occurs and a systemic crisis deploys, when signs of dynamic financial and economic instability are manifested, a critical point of decline in performance indicators is reached, a lack of strategic resources is exacerbated, diametric divergence takes place in the positions of leading specialists and etc. In such conditions, there is a need for the introduction of mechanisms and tools for anti-crisis staff management that will allow to respond promptly to crisis phenomena and ensure competitive balanced development of the enterprise.

Aims. The article covers new aspects of anti-crisis staff management that have not been properly reflected in the scientific literature and sufficiently distributed in practice. The author considers the anti-crisis staff management as a comprehensive tool of personnel security of the enterprise.

Results. The formation of project teams to overcome the crisis is a process of uniting a specially created group of specialists and experts to work on a project to eliminate the company from the crisis, created for the solution of extraordinary tasks, which provide personnel security.

Conclusions. An effective tool for strengthening personnel security must be anti-crisis staff management, built on a number of principles and implemented through the use of appropriate methods of staff management. Special attention must be paid to teamwork, which provides a synergistic effect in the functioning of anti-crisis organizational entities.

Key words: personnel management, personnel security, command management.

At the dawn of the XXI century, there are vast changes in all spheres of life that have ambiguous consequences and give rise to new challenges. One of the challenges of the modern global world is the dynamic development of a behavioral economics with dominated psychological peculiarities of human perception, when in making decisions taking place prediction of possible consequences of actions in terms of obtaining benefits or harm depending on the chosen benchmark of behavior [1]. Owing to such imperatives, the questions of the personnel component of economic security of enterprises are intensifying, in particular, public as strategic subjects of action. Furthermore, get worse demand for introducing a number of organizational and economic measures that would protect the company from the risks of loss of professional and work-related secrets, damages caused due to lack of competence and motivation of the personnel.

The results of international research show: losses that can be caused by its own personnel of the enterprise can reach about 9% of turnover of the enterprise [2]. This might be connected with actions such as the unintentional transmission of information through communication in social networks, disclosure of professional and work-related secrets with the objective to obtain monetary compensation, unprofessional actions that led to significant losses, etc.

The risks of imminent danger to the personnel and to the economic security of the enterprise as a whole raise if a crisis occurs and a systemic crisis deploys, when signs of dynamic financial and economic instability are manifested, a critical point of decline in performance indicators is reached, a lack of strategic resources is exacerbated, diametric divergence takes place in the positions of leading specialists and etc. In such conditions, there is a need for the introduction of

mechanisms and tools for anti-crisis staff management that will allow to respond promptly to crisis phenomena and ensure competitive balanced development of the enterprise.

The study of push and pull theoretical-methodological and applied problems of anti-crisis management on the personnel' principle management and providing personnel security in the economic security structure is devoted to the works of foreign and Ukrainian scholars - E.I. Altman, D.J. Mayersa, T.S. Peters, R.J. Kaponingo, I. Ansoff, T. Tuffler, Burda I. Ya., N. L. Gavkilova, O. Gerasimenko, S. P. Kalinina, A. M. Kolota, T. A. Kostyshina, O. V. Krushelnitskaya, O. E. Kuzmina, L. S. Lisogor, A. M. Lyashenko, A. F. Novikova, V. V. Onikienka, A. I. Pacyula, V. M. Petyukha, S. O. Tsimbalyuk, L.V. Shaulskaya and others.

The article covers new aspects of anti-crisis staff management that have not been properly reflected in the scientific literature and sufficiently distributed in practice. The author considers the anti-crisis staff management as a comprehensive tool of personnel security of the enterprise.

The aim of the work is justification of the theoretical frameworks of anti-crisis staff management in the context of providing personnel security of the enterprise. The author shares the point of view of those scholars who regard the personnel security as a subsystem of its economic security, whose function serves the purposes of

countering the threats to the internal and external environment, aimed at achieving a dynamic equilibrium [4] and are interpreted from the prospective of the process of preventing negative effects on the economic security of the enterprise through the risks and threats related to personnel, its intellectual potential and labor relations in general [3].

According to the author, the personnel security of the enterprise is a multidimensional process of staff management at all its stages (search, selection, assessment of competence and identification of psycho-emotional qualities, motivation and formation of loyalty to the enterprise, etc.), which allows to predict and identify possible risks and threats from the personnel side on time, to ensure the economic security of the enterprise through the establishment of a clear monitoring system of personnel processes and situations that will resist the threats to the environment.

It should be mentioned that the guiding idea or the main requirement of the effectiveness of the managerial process is the principle that carries workload as a methodological tool of the formation, study of the state and the development of mechanisms of anti-crisis staff management. Principles of staff management reflect objective trends, social and economic laws, scientific recommendations of social psychology, theories of management and organization. The following can be included to the group of general principles of anti-crisis management (Figure 1):

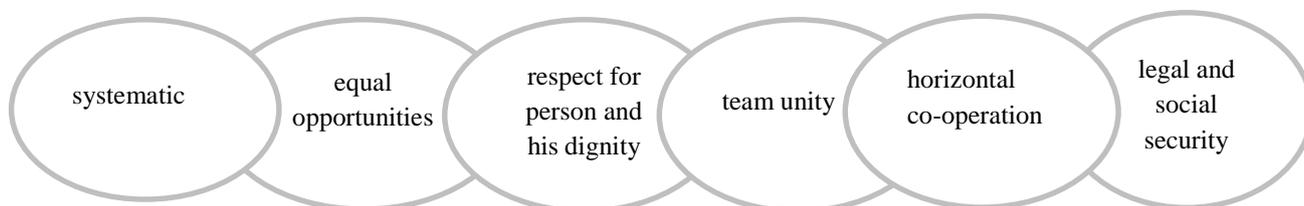


Fig.1 Principles of anti-crisis staff management
Source: compiled by author on the basis of [5]

Principle of systematic approach. Staff management implies that officials, specialists, and human resources personnel consider the human resource of the enterprise as a holistic dynamic system that covers all categories of employees and is closely related to the external environment of the enterprise. The systemic nature of staff management involves a coordinated approach to all areas of formation and regulation of human capital of an enterprise: recruitment, selection, placement of leading officials, their training and retraining, etc. [6].

Principle of respect for the human being and his dignity. This principle is the basis of winning the people's trust, which is quite necessary for success. It includes: the maximum development of initiative, talents, professional competence, the ability to find oneself in a new surroundings, promotion of staff achievements and their personal contribution, creating opportunities for personal growth, ensuring such conditions that everyone's voice is heard. Moreover, protection of rights, dignity and guarantees of personal safety. This is a way of leadership thinking, in which needs and interests of

employees are in the first place among the priorities of the enterprise.

Principle of team unity. The team is a carefully selected professional, self-governing staff that fully shares main goals and values of the enterprise acting as a whole. All team members have equal conditions, they plan activities based on the work plan of each member of the team and

are collectively liable for its results. The functions of each member of the team are flexible and, as a rule, are specified in the management process, taking into account the situation. Formation of project teams to overcome the crisis is the process of uniting a specially created group of professionals, which work on a project to remove an enterprise from the crisis, and is carried out in order to solve innovative or often extreme tasks. (Figure 2).



Fig. 2. Principles of creating a team to overcome the crisis
 Source: Created by author on the basis of [7]

Principle of horizontal co-operation. In the majority of prosperous enterprises, there is a tendency to transfer of rights and liabilities to the grassroots level of management. Managers of this level are able to perform their functions in the absence of rigorous control from above. However, in order to ensure adequate information support and coordination of works in these conditions, a network of horizontal ties characterized by a high degree of complexity is needed. A typical vertically oriented structure with strong elements of bureaucracy is not able to cope with this task [8].

Principle of legal and social security. This principle implies that managers, entrepreneurs, employees of the personnel services must know norms of administrative,

civil, labor, economic, criminal law. Inadequate legal training of managers may adversely affect the protection of employees' rights, lead to conflicts with them in the process of hiring and dismissal operations, and in other situations.

There are also partial principles that are used predominantly in certain situations. This group includes the following basic principles: taking into consideration the long-term perspective of the enterprise, integration and unity of the group, participation of co-workers in making decisions; reliance on a professional core of human resources, balancing of managers' and subordinate employees' interests.

Principle of accounting the long-term prospects of the enterprise. Implementation of the requirements of this principle involves the realization of strategic forecasting and planning of enterprise development [9]. The strategic forecast must answer the question: how many employees, which qualifications, when, in which circumstances and at what stages will be worked? What workplaces are planned to be cut, whether new ones will be created, and for what number of staff retraining and skills development is needed? What budget is needed to implement the proposed personnel changes? Strategic forecasting and planning will be effective if they are included in the general system of forecasting and planning the development of enterprise [10].

Principle of team cohesion and integration. Implementation of this principle is possible while educating the team in the spirit of corporate, joint liability and understanding of the fact that each personal destiny depends on the success of the enterprise, from the right choice of development strategy. Reorganizing, you must not be obsessed with the mechanical reduction of jobs, curtail programs for skills development and training personnel. These measures can cause staffs stress situations and dissatisfaction with management. On the contrary, it is essential to do everything possible to ensure that the workers wanted to improve their skills, self-development and prepare for the reorientation of the enterprise to produce new types of products and services. It is significant to maintain the trust of employees with leaders of different levels and have respectful attitude to each other, to ensure fair wages [11].

Principle of staffs participation in making decisions. In large enterprises, strategic decisions are made at meetings open to a wide range of employees. Usually, everyone who is involved in the implementation of the made decisions, always presents at the meetings and participates in the discussion of the anticipated solutions, gives their recommendations and makes suggestions for improving one or another option. Such participation prevents resistance of personnel to organizational and technological innovation, promotes not only the mutual understanding of managers and rank and file employees, but also significantly increases productivity [12].

Principle of reliance on the professional core of the personnel potential. The core of the personnel potential is a combination of capabilities of the enterprise's staffs, which provide him with a strategic advantage on the markets of goods, services and knowledge. The value of these advantages lies in the fact that competitors are incapable of producing products and services of a similar quality or are late with the introduction of innovations. These abilities are inherent in the organizational system of the enterprise, rather than the individual eminent workers. They serve as a long-term basis for the development and adoption of strategically important

solutions that ensure the evolution of the organizational system and its adaptation to changing conditions of the environment. [13].

Principle of balancing subordinate employees` and managers` interests. In most successful companies, the significant role is assigned to the collection of information regarding the staffs` opinions about the business organization, the content of the management, the conditions and remuneration of personnel` work, the adherence to the principles of work ethics, the involvement of staff in solving corporate tasks, etc. [14]. We shall notice that principles work when they interact and complement each other, being integrated into a holistic system. Thus, staff management in the conditions of the crisis situation of the enterprise is a diversified, carefully planned and well-considered activity, based on a system of scientifically validated principles, art and the common sense of entrepreneurs and managers.

To overcome the crisis and enhance personnel security, a number of human resources management tasks must be implemented:

- formation of a managers` team, capable of developing and realizing a program of survival and development of the enterprise;
- preservation the core of the personnel potential of the enterprise: managers, specialists, workers, who have special value for the enterprise;
- restructuring of the personnel potential of the enterprise in connection with organizational changes in the course of restructuring, implementation of innovative and investment projects, diversification of production and reorganization of the enterprise [15];
- reduction of socio-psychological tension in the collective;
- ensuring social protection and facilitating further employment of redundant workers.

The methods of staff management in circumstances of crisis at the enterprise are aimed at overcoming resistance of changes by personnel. Let's consider the most common methods of personnel work in the mode of anti-crisis management [16].

While using the adaptive change method, conflicts are resolved through compromises, agreements and job placements in the management. This method gives an opportunity to make changes in conditions, when there is no administrative authority for supporters, but there is a strong motivation to innovate and an appropriate way of thinking.

The method of compulsory organizational change involves the use of force. This process is expensive and socially undesirable, but has significant benefits in terms

of strategic response during the crisis. It can be used in conditions of strict time constraints.

When using the resistance control method, it is assumed that at the time of crisis, resistance usually gives way to support. In such a situation, the task of leadership is not the fighting with resistance, but the adoption of measures to prevent panic. The first signs of getting out of the crisis are evidence of resumption of resistance.

The crisis method implies that if a crisis is inevitable, managers who are aware of it before others should implement the following actions:

- to try to persuade workers of the inevitability of the crisis and to take precautionary measures;
- do not be obsessed with the inevitability of the crisis, but prepare yourself for the role of "savior", when the crisis will come;

- to create artificial crisis before the outbreak of real one, having invented an external "enemy", who threatens the existence of the enterprise. It must be remembered that an artificial crisis does not necessarily have to turn into a real one.
- to choose an effective method for controlling the resistance.

In general, the management process is reduced to the fact that the resistance is controlled at a minimum with the help of a "launch pad", then consistently applied motivation. During the planning, the process of implementing changes is being developed. Resistance is under control throughout the process of change [7]. The comparative characteristics of the described methods are given in Table 1.

Table 1

Comparison of methods to overcome resistance to organizational change

Methods	Conditions of use	Advantages	Disadvantages
Forced	Considerable urgency	Rate of change	Great resistance
Adaptive	Insensitive urgency	Weak resistance	Slowness
Crisis	Threat of Existence	Weak resistance	Strict time constraints. The risk of failure
Management of resistance	Average urgency	Weak resistance	Complexity
Combination of techniques	Combination	Adaptation to the conditions	Difficulty in management

Source: Created by author on the basis of [17]

In the process of diagnosing the state, choosing a specific method, in addition to these areas of their effective use, must be taken into account two basic options:

- time horizon (degree of complexity of organizational changes, available time resources for their successful implementation);
- professional, psychological, technical readiness of the personnel for strategically important changes at the enterprise.

Extremely important in circumstances of crisis is the management of organizational change. The practice of business restructuring shows that managers' attention must be focused on two aspects of adapting innovations: managing change and reducing counteraction to planned changes.

Any enterprise is in the process of continuous change, otherwise its ability to survive in a dynamically changing environment is endangered. In some enterprises, changes

take place purposefully, incorporating the concepts of planned improvements, which are systematically developed, others are rather informal and adaptive in nature.

The senior management department makes decision to introduce innovations, assigns individuals or groups of employees responsible for certain aspects of the change. It is desirable that new people manage the process of change. The anti-crisis manager is a person who represents management functions. In addition to the classical management functions, the basis of his work are the following functions.

1. Strategic function - consists in formulating them on the basis of analysis of the situation and goals forecasts of the organization, coordination of the process of developing a strategy and a plan.
2. Administrative function – aimed at monitoring and evaluating results, implementation of adjustment of

activities, matching its terms, time and resources, the development and introduction of a reward and penalties system.

3. Experimental-innovative function - requires from the anti-crisis leader continuous, purposeful awareness of innovations in various spheres of economy, their qualified assessment and selection, creation of conditions for immediate implementation in practice.

4. Educational function - establishes a creation of a favorable staff morale, support of traditions, prevention and resolution of conflicts, formation of standards of conduct.

5. Leading function - in this function, the anti-crisis leader acts as the initiator and integrator of work, which ensures that the interests of subordinates and employees do not contradict the goals of the enterprise. It depends on the general mood in work and the preservation of the internal unity of the group [7].

Some scholars point out that the staff has a specific picture of the most common goals that identify the mood of its members, the so-called "collective spirit". The leader should know this in order to determine the timeline of introducing innovations, communicating with the staff "in their language", as in, the language of the important goals for them. For example, in enterprise the most important are the reliability and proper wages, and the desire for independence, personal responsibility and creativity is only expressed through implementation of

some innovations, it should begin with the introduction of a new remuneration system from the result, and the delegation of authority to be implemented gradually accordingly to staff readiness level.

From the point of view of the human factor, the resolution of a crisis situation requires a change in the type of professional work and management culture. Solving the problem of readiness of personnel for action in crisis situations is based on the concept of creating psychological comfort, in other words, the achievement of such a personnel state, in which occurs the matching of facilities and working conditions with the functional capabilities of employees. The structure of readiness includes motivational, orientational, operational, strong-willed and evaluative elements.

One of the priority tasks, to be addressed, is the socio-psychological aspect of staff management. A successful manager tries to develop a human resources policy in such a way that in a crisis there will be no problems with the personnel due to the people's uncertainty in their own future. This is a extremely serious issue for many enterprises, because the whole situation often depends on the behavior and trust of employees. In addition, personnel policy should be rational, which is especially important in a crisis [19].

The features of the crisis management process, which is implemented consistently should be considered to develop mechanisms and select tools for anti-crisis staff management (Figure 3).

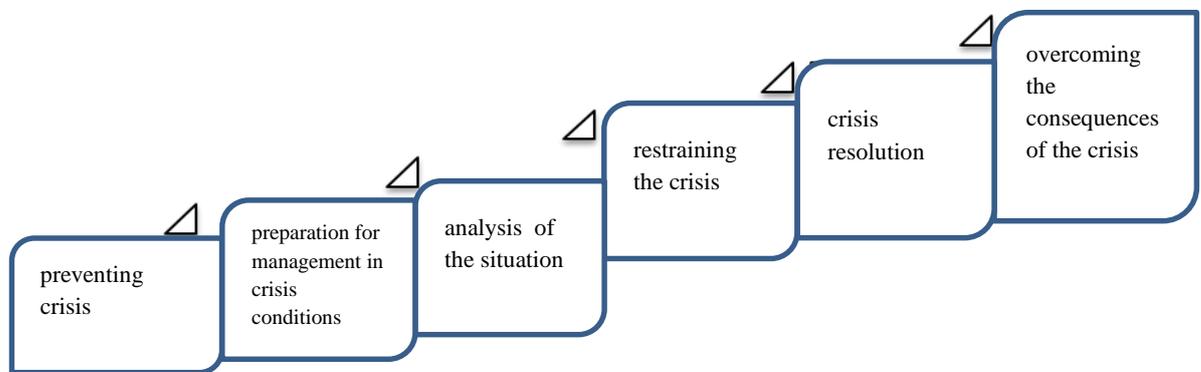


Fig. 3. Stages of anti-crisis management.
 Source: created by author on the basis of [5]

Stage 1: Preventing the crisis. At this stage, a list of factors that can adversely affect the business, predict the possible negative consequences and the price of the necessary preventive actions should be drawn up. This could be the creation of a crisis center or a special group, etc.

Stage 2: Preparing for crisis management. At this stage, management begins to develop action plans, considering the potential risks and the variety of unintended consequences of the crisis.

Stage 3: Analysis of the situation. The most difficult is the objective assessment of the crisis situation. Mistakes can arise either because of an incorrect interpretation of the factors that caused the crisis, or because of the ignorance of serious threats coming from the external environment. Collecting information about the crisis, most managers rely on assessment of the enterprise's staff. At this stage it makes sense to involve external experts (experts) [16].

Stage 4: Restraining the crisis. The main thing at this stage is the establishment of the priority actions to remove the enterprise from the crisis. The problem is precisely the identification of the most important information and clear criteria for assessing a particular situation [20].

Stage 5: Resolving the crisis. The main thing is the rate of actions. It is necessary to evaluate the situation, identify appropriate measures and act immediately [21].

Stage 6: Overcoming the consequences of the crisis. At this stage, the company determines the measures to recover the losses it suffered during the crisis or to restore lost positions. Each of the six stages mentioned above must be filled with concrete measures considering a particular situation, business characteristics, qualifications of the key participants in the anti-crisis management process. It is important not to waste time and to assess the variety and depth of problems that need to be addressed as soon as possible [22].

On this occasion Jim Collins emphasizes: "Do an autopsy without establishing who is responsible for death. If the project team is right, there is no need to look for guilty, we must understand the problems and draw conclusions "[23].

Guiding the staff, the core of development should be a clear goal. It mobilizes the project team and the whole team, and each of its members must clearly understand the significance of their work. And knowledge of the goal must be understandable not only logically, but also "passed through the heart." In this case, its achievement will become an important affair of each member of the team. One of the conditions for a successful advance to the intended goal is discipline. Therefore, at this stage of the formation of a management project team and a leader's collective can be used the legislative style of management [24]. This style is characterized by the fact that the head demands the subordinates and strictly controls the implementation of committed orders, encouraging and punishing subordinates, without consulting with anyone, and assuming all responsibility for himself. The second stage is characterized by the fact that in the project team ends the process of studying each other, roles are assigned and the personal positions of each participant are determined. In collective, informal groups are formed in the process of solving intended

tasks on the basis of mutual psychological gravities (sympathies) and common interests. Groups with executive psychology can be formed [25].

In the passivity of the leader, groups which will include undisciplined people with excessive ambitions may be formed. The influence of such groups reduces the productivity of collective work and adversely affects team's morale climate. It is especially dangerous when such people get into the project teams. The tasks of the leader at this stage is to create the core of like-minded people. Psychologists have established that if the requirements are from the leader, they are perceived subordinates as external. If they are nominated and supported by members of the team, then such requirements are considered as their own and significantly more influences on the person.

No one in such a team feels isolated and defenseless. The unity of will manifests itself in the ability of the collective to overcome the difficulties, obstacles and bring the matter to the end, as well as the ability of each person to subordinate personal interests to the public. Thus, at this stage, the collective finally approves the relations of friendly cooperation and mutual assistance. This is the way from the great goal set by the supreme leader, through the formation of project teams of like-minded people to a single focused team. At this stage, not only the leader, but all employees feel responsible for the work of the entire team. While distributing responsibilities in project teams, it is important for the leader to know particular characteristics of its participants. If group members are solid and able to withstand negative external influences, then the group can be characterized as strong.

Consequently, the formation of project teams to overcome the crisis is a process of uniting a specially created group of specialists and experts to work on a project to eliminate the company from the crisis, created for the solution of extraordinary tasks, which provide personnel security.

The organizational aspect of strengthening the economic security of the enterprise should be the service of economic security, in whose function a unit of staff management is laid down that allows to diagnose the threats that arise from the professional and behavioral competencies of employees on time. Among the responsibilities of the management of enterprises, the importance of developing rapid reaction plans and restoring the management system of anti-crisis actions in case of emergency with the use of perfect management technologies for staff management is increasing. A prerequisite for risk prevention must be recognition of the monitoring of global and regional trends in the field of information and technological disasters (hacking attacks, spread of computer viruses, etc.), tracking of factors that

can lead to emergencies with threats to the economic security of the enterprise.

Conclusions

The beginning of the new century in the history of mankind has been marked not only by new development opportunities and the horizons of encouraging prospects, but also by the growing scale of existing threats and the fundamentally new risks of different hazards. The deployment of a behavioral economics, the dynamic development of high technologies and information systems, turbulent trajectories of a changing market economy create prerequisites for the emergence of numerous threats to successful enterprises.

Experience shows that the bulk of the risks is generated by the employees themselves, and the largest share of losses in the enterprise is caused by illegal and

unprofessional or incompetent actions of employees. Increasing the risks and threats to the enterprise's economic security is characterized by those stages of the enterprise's life cycle, when a crisis arises, especially a systemic one. In these circumstances, due to the difficult financial and economic situation and the limited staffing budget, the degree of job satisfaction, the level of implementation of the needs of employees, which leads to unfair or even illegal organizational behavior, deteriorates substantially.

An effective tool for strengthening personnel security must be anti-crisis staff management, built on a number of principles and implemented through the use of appropriate methods of staff management. Special attention must be paid to teamwork, which provides a synergistic effect in the functioning of anti-crisis organizational entities.

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**COCOA MARKET DEVELOPMENT IN AFRICA: CASES
OF NIGERIA AND GHANA**

Abstract

Cocoa crop is one of the economy boosting crops in the world, one of the best cash crop that a nation can be endowed with. The history of cocoa production in Western Nigeria and Ghana is an example of a successful innovation in the Schumpeterian sense of the term—a new productive activity which, when adopted by a number of producers, leads to economic growth and structural change within a given institutional and social context. Cocoa farming spread in Western Nigeria and Ghana through the efforts of some missionaries, migrant farmers, many of whom relied on traditional, non-economic institutions, such as the lineage or ethnic community, to mobilize the economic resources they needed to establish cocoa farms. From an examination of the activities of migrant farmers in three Yoruba states in Nigeria —Ibadan, Ife and Ondo—it is argued that the spread of cocoa farming probably strengthened these traditional institutions. At the same time, it has effected significant changes in the volume, organization and geographical distribution of rural economic activity in Western Nigeria. This paper gives or throw more light in knowing the history of cocoa, problem in cocoa farming sectors, including some researcher and personal solutions to this problems. It also boost our awareness that there are more to be considered in agricultural field especially cocoa being the major topic here, there is a future for every cocoa producing country, if only they put more effort to it. At the end of this paper it will be clear that cocoa production is a profitable business respective of management system, government especially have a very important roles to play. The paper also examines how the reforms of the Ghanaian cocoa sector have affected its performance in terms of producer prices, production, yields and quality levels. In comparison with other cocoa producing countries that have undergone more extensive liberalisation reforms, the performance of the Ghanaian cocoa sector is still relatively low.

Key words: *cocoa market, structural changes, management system, liberalization, reforms, performance.*

In the late 17th century, as cocoa drinking spread across Europe, French, English, and Dutch plantations were also established in the West Indies and South America. As with other colonial plantations in the ‘New World’, the production in these plantations used slaves from West Africa. In 1828, Conrad J. van Houten invented the cocoa press to extract cocoa powder from cocoa butter, and the first chocolate bar was created in the mid 19th century. These developments made chocolate affordable for the mass-market and demand for cocoa increased (Anti-Slavery International 2004). The Spanish island of Fernando P (Bioko), off the coast of Cameroon was also one of the earliest cocoa-producing colonies in Africa.

In contrast, the expansion of cocoa production in Ghana is a success story of African smallholder farming.

Although there were European cocoa plantations as early as 1890, these were unsuccessful over the long run, it lasted only into the 1940s. The higher profitability of African farms is often explained by their access to family labor, but may in fact be due to less labor-intensive African methods (much criticized at the time). Cocoa is especially suitable for smallholder farming because it can be mixed with traditional food crops. Cocoa flourishes in areas that are not more than 20 degrees north or south of the equator. The trees respond well in regions with high temperature and distributed rainfall.

Early cocoa production in Nigeria was encouraged by the Christian Mission, the African Church, and the Coker family. It began in the Western Region and later spread to the south west.

Cooperatives

The low production of cocoa by most growers and farmers in West Africa reduces their negotiating strength in the market. It also improves their access to information about the market and issues such as quality premiums. This leaves them at the mercy of independent traders or other large buyers of their cocoa. One method of improving their situation is the formation of co-operatives or other joint marketing ventures. Four years ago the International Cocoa Organisation (ICCO) established a project to improve the functioning of cocoa markets.

The specific objectives are: to improve the quality of exported cocoa; to facilitate financing of the trade; to provide market information; and to address trade and price risks. The project intends to achieve its objectives through technical assistance, training and practical implementation of new systems. Initially it is under trial through pilot projects in Côte d'Ivoire, Cameroon and Nigeria.

The project components are:

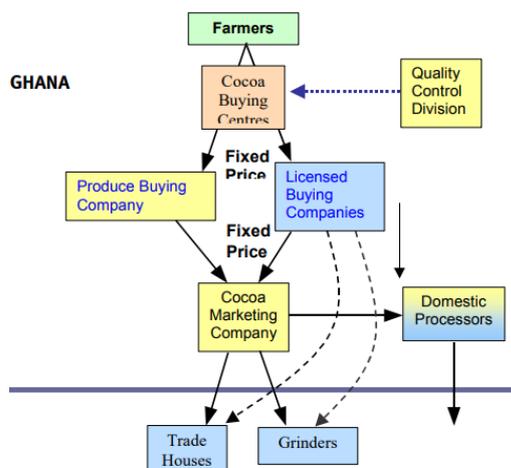
- promotion of a privately run warehousing systems;
- development of cocoa marketing information systems;
- development of quality assurance and certification systems;
- development of systems of commodity trade finance;
- project implementation and co-ordination, at local level;
- project execution; staff training; and dissemination of project results.

In Nigeria, the Ife CMPU (Co-operative Multi-Purpose Union) is the most active cocoa co-operative in the country. A number of companies are interested in participating in the ICCO project, including collateral managers, cocoa traders/exporters, co-operatives, commercial banks and forwarders.

The situation in Ghana is dominated by the large co-operative Kuapa Kokoo, but two other groupings: Ghana Co-operative Marketing Association Ltd., and the United Farmers' Marketing Co. Ltd. are recognised as exporters. After the liberalisation of internal cocoa marketing in Ghana, some farmers led by Nana Abebrese, with help from Twin Ltd UK, established a cocoa farmers co-operative in 1993. This co-operative was called Kuapa Kokoo ('Good Farmers Cocoa' in the Twi dialect). Its purpose was to collect and sell members' cocoa to the government cocoa buying board for the members' own

benefit. Over the years, Kuapa Kokoo has evolved into a formidable force as far as cocoa marketing in Ghana is concerned.

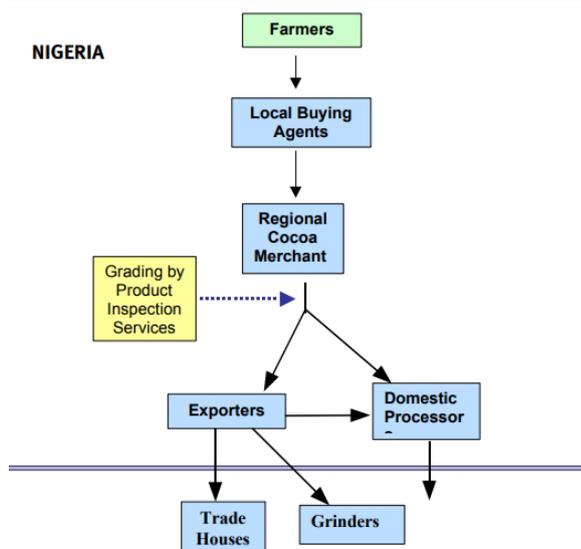
Market power and pricing



Marketing structures in West Africa Ghana according to the picture above:

1. Farmers take their cocoa to buying centres, operated by the Ghana Cocoa Board (Cocobod). Cocobod operates subsidiary organisations throughout the marketing chain, including the Produce Buying Company (PBC) and Cocoa Marketing Company (CMC).
2. The cocoa is weighed on certified scales. The PBC Quality Control Division then grades and seals it into export sacks
3. Farmers are paid by Cocobod representatives or private buyers, who handle around a third of the crop (1996), in Cocobod cheques at a price fixed by Cocobod.
4. The cocoa is then taken to 'take-over points', such as Tema port, where it is sold to the CMC at a fixed price.
5. The CMC sells it to export companies, around 70 per cent having been pre-sold in forward sales.
6. The government is able to stabilise prices to farmers within a season.
7. A few licensed companies may be able to export up to 30 per cent of their crop directly, but according to the Day Chocolate Company this has not been put into operation yet.
8. Farmers may also sell their cocoa to co-operatives, notably Kuapa Kokoo, that sell to the government in the same way.

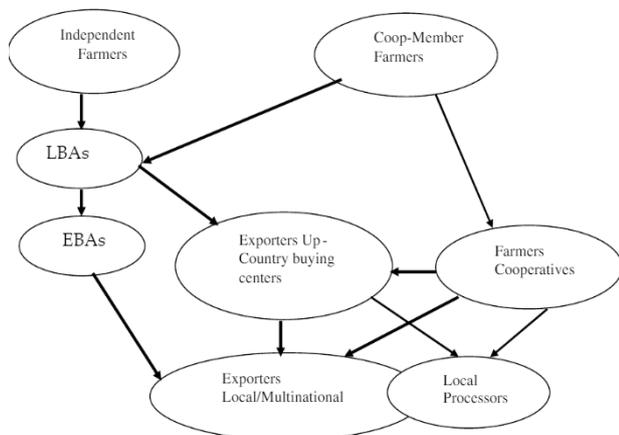
Marketing structures in West Africa Nigeria



Marketing structures in West Africa Nigeria according to the picture above:

1. Farmers sell to local buying agents, typically funded by regional cocoa merchants (no price controls in the country).
2. The merchants deliver the beans to the state government produce inspection services for grading.
3. They then sell them to exporters or domestic processors.
4. Exporters may also sell to domestic processors or export the beans, selling them to trading houses or overseas grinders.
5. Export duties for cocoa do not exist in Nigeria, but there are grading fees, merchant registration fees, warehouse inspection fees and fees on the movement of cocoa, among others.

Marketing Chain of Active Stakeholders in Nigerian cocoa economy



Liberalisation and marketing structures

During the colonial period, governments controlled the cocoa market in most West African countries. After independence, governments often continued the marketing systems that they inherited from their former colonial rulers. In Ghana and Nigeria marketing boards followed on from structures set up by the British Government during the Second World War to control exports. In Côte d'Ivoire, the Caisse de Stabilisation et du Soutien des Prix des Produits Agricoles (Caistab) was created in 1964 following on from stabilisation funds for cocoa and coffee established by the French in 1955. In a marketing board system, cocoa is bought from the farmer by a government board or its purchasing arm, and is sold on to international trade houses and domestic processors. In contrast, a caisse system also acts to stabilise prices and costs for farmers and exporters through a stabilisation fund, but never takes ownership of the products it controls; purchasing of cocoa being carried out by private agents, licensed by the caisse marketing boards. They can control prices paid to farmers more effectively, since they act as the buyer, but both bodies control export prices. The structure in Cameroon before liberalisation was intermediate between these two models.

The main advantages of these systems were:

- Protecting farmers from market fluctuations.
- Making it easier for the government to obtain revenue through export taxes.
- In the case of marketing boards, they were egalitarian, with all growers paid the same price for their crop.
- Marketing boards also often provided inputs to farmers on credit, recovering the cost from the price of the crop.
- More control over quality.

The main disadvantages were:

- the use of stabilisation funds for other purposes by governments.
- Bureaucratic inefficiency and corruption increasing marketing costs.
- Low farm-gate prices for the farmers resulting from these factors.

These disadvantages, along with the influence of the prevailing economic orthodoxy, led the World Bank and IMF to promote liberalisation of export crop marketing as part of structural adjustment programmes. Cocoa marketing systems were liberalized in Nigeria in 1986 and in Cameroon in 1991 and 1994. While in Nigeria, liberalisation occurred abruptly with little outside pressure. In Cameroon it was precipitated by falling world cocoa prices in the late 1980s. Although there were reforms in 1996, substantial liberalisation in Côte

d'Ivoire did not occur until 1999, and this has now been partially reversed. Ghana is the only country where the state still controls cocoa marketing, through the Cocoa Marketing Board (Cocobod). Even in Ghana, private buyers are being allowed increased involvement. In Ghana very limited liberalisation has occurred. In 1992/3 private firms were licensed to buy cocoa in addition to the Produce Buying Company (a subsidiary of Cocobod). They had to buy from the farmers at a fixed price and sell all the cocoa they bought to the PBC at a fixed price.² It was announced that from the 2000/01 crop season licensed buying companies would be allowed to export up to 30 per cent of their purchases directly, but according to local sources this has not yet come into effect.

Cocobod still controls the majority of the harvest, and to reduce risk of being affected by falling world prices, it undertakes futures sales up to a year before the harvest. The prices obtained for these, along with forecasts of future prices, are the basis for the fixed, farm-gate price offered to growers.

Present problems around cocoa sectors

After a lot of consideration and the importance of cocoa in the global economy, ensuring the sustainability of its production is critical, particularly at a time when most young people do not consider farming, including cocoa farming, a viable business choice. In the case of low productivity in cocoa farming (some cases has been touched in previous chapters) is as a result of low profitability its farming businesses and the relatively poor living standards of cocoa growers. Indeed, farmers along the cocoa global value chain (GVC) receive relatively low revenues.

For example, Cocoa Barometer (2015) estimated that cocoa farmers receive approximately 6.6 percent of the total value added to 1 ton of cocoa beans that are sold,² and the International Labour Rights Forum (ILRF, 2014) estimated that the net earnings of typical cocoa farmers with 2 hectares (ha) of land in Côte d'Ivoire and Ghana are about \$2.07 and \$2.69 per day respectively.³ These values are just above the global poverty line of \$1.90 per day.

Considering that a typical rural household in these countries may exceed 5 people, the daily net income per person would therefore be much lower than the global poverty line. Moreover, cocoa farmers' situation is often exacerbated by their "scattered" nature, which reduces their bargaining power in a context of an increasingly integrated industry. As a result, the younger generation of farmers is shifting to more profitable business neglecting the agricultural sector especially cocoa activities and so migrate.

Poor market structure and amenities

Another part of the problem is that cocoa farmers receive only a part of the world market price for beans, due to local trading structures, taxes and also the quality of the beans. For example, over the last ten years farmers in the Ivory Coast attained only between 40 to 50 % of the world market price for their beans. Farmers are rarely organised and lack insight into market trends for cocoa prices. They have to sell their cocoa at prices dictated by the intermediaries.

Monetary policy

In cases where macroeconomic policies (e.g. monetary policy) have led to distortions in a country's exchange rate (e.g. real currency overvaluation), as well as unstable and high level of inflation rate, these can affect the amount paid to farmers. This was the case in Ghana during the 1980s and 1990s. The situation is often exacerbated by the fact that the country's Cocobod determines farmers' prices at the beginning of the season without an adjustments in line with the rate of inflation afterwards. In 2014, there was an occurrence of inflation at an high level in a context of a depreciating local currency (the Ghanaian cedi), the country's cocoa farmers smuggled their crops to Côte d'Ivoire to capture higher prices. Thus, prudent macroeconomic management aimed at avoiding distortions in the exchange rate, combined with moderate rate of inflation, critical to improve farmers' situation. Otherwise, prices paid to farmers may have to be linked to rate of domestic inflation in order to avoid an unnecessary erosion of their real incomes.

During the first half of the 1980s both the Ghanaian cedi and the Nigerian naira currencies were considerably overvalued. This acted as an unofficial tax on farmers, and real producer prices were much lower in Ghana and Nigeria than in Côte d'Ivoire and Cameroon. In Ghana devaluation associated with exchange liberalisation and structural adjustment raised the price farmers received in cedis. In Nigeria, exchange rate fixing complicated the effect of liberalisation in 1986, because exporting cocoa allowed the naira to be converted into a hard currency.

Many companies previously uninvolved in the cocoa industry rushed to take advantage of this and it led to higher prices for farmers in the short term. In the long term it led to problems such as defaults on forward contracts and falling quality. With foreign exchange liberalisation producer prices fell, but when access to foreign exchange was restricted once more in 1991/2 they rose again. Now that this problem has been dealt with and the system is completely liberalised, farmers are receiving around 85 per cent of the FOB price.

Marketing of cocoa beans

Historically, the marketing of cocoa beans from farm gates to export markets has been controlled by national commodity boards in most producing countries such as Cameroon, Côte d'Ivoire, Ghana and Togo. Although, their specific functions is different across countries. Generally, these boards would purchase cocoa beans from farmers at a fixed price and act as the principal seller or exporters. However, in the wake of trade liberalizing reforms in the 1980s and 1990s, including liberalization of cocoa bean markets, the boards retreated progressively, except in Ghana. Farmers now sell their crops directly at buying stations to exporters' agents or to traders and brokers, who usually use the prices of cocoa beans futures in international markets, as reference.

These prices are denominated in United States dollars, pounds sterling and, more recently, euros (see article below). Once the beans are bought, they are transported to roasting and grinding plants in producing or importing countries. When cocoa beans are exported to consumer countries, local buyers transport them to an export company then, the company will verify them, grade and store them into burlap, sisal or jute bags for shipment to the importer's warehouse. Increasingly, the beans are shipped in bulk, as this is cheaper than using bags, which was the conventional shipping method. At the port of destination, the importer may conduct further quality checks before storing or selling the beans to cocoa processors or chocolate manufacturers.

Future in cocoa farming sector

There is future in the economy of cocoa producing and consuming countries. For producing countries, history has made up to understand that, it generates export revenues, income and employment. In Côte d'Ivoire and Ghana, for example, this commodity accounted for more than 30% of exporting earning over the period of 1995-2014. As it is cocoa is being produced by five to six million farmers and have it own impact in the livelihoods of 40 to 50 million people (WCF, 2012). For most of these people, cocoa constitutes the main, if not only, source of cash income. In consuming countries, cocoa is an important ingredient in the confectionery, and food and beverage industries, and, more recently, in the pharmaceutical and cosmetics industries. We can see that this sectors hold a but very big part in the producing countries.

In order to make cocoa farming a more viable source of livelihoods so as to attract younger people and ensure a sustainable global cocoa economy, it will be essential to reorganize the cocoa farming business to enable farmers to obtain higher incomes.

1. Boosting cocoa farmers' incomes by improving their linkages with international markets and increasing competition in national markets was already a key objective of trade liberalization reforms undertaken by producing countries in the 1980s and 1990s (Gilbert, 2009; Wilcox and Abbott, 2006).
2. The complexity of cocoa markets, characterized by transnational corporations' ease of access to finances, resources, risk management instruments as well as technologies, and their singular objective of achieving scale economies have led to increased vertical and horizontal integration in industrial sectors. (ACET 2014, Gilbert 2009)

In countries with liberalised cocoa sectors (Cameroon, Nigeria, Indonesia), there is some scope to raise farm-gate prices through increasing cocoa farmers' bargaining power and opportunities to earn alternative income options, which in turn requires better access to market information, training, infrastructure, and finance. As the case of Indonesia illustrates, having more realistic alternatives means that farmers can opt out of cocoa, which likely is one of the reasons why cocoa prices in Indonesia are higher.

In countries with regulated cocoa sectors (Ghana and Cote d'Ivoire), there is scope to raise farmgate prices by improving the transparency, efficiency and effectiveness of the regulated system. Increasing competition among cocoa traders is less of an issue here since regulated farm-gate prices already provide some protection for cocoa farmers. Nevertheless, an improvement in enforcement is needed in some cases to ensure that farmers indeed receive the regulated farm-gate price, that weights are used correctly, etc. A more important measure is to increase transparency about the way regulated prices and cocoa taxes are determined, and about the spending of these cocoa tax revenues. Finally, there is scope to improve the quality of cocoa beans, and therefore potentially the price paid for these beans, through more effective public investments and improved quality standards.

At the micro level of the individual cocoa farmer, the most effective way to achieve a 'living income' from cocoa is to increase the productivity of cocoa farming. We estimate that there is still ample scope to raise cocoa productivity through increasing cocoa-specific knowledge, cocoa-specific training, cocoa-specific inputs, and cocoa-specific finance.

However, such measures are unlikely to work at the macro level, as raising the productivity of all cocoa farmers would lead to an oversupply of cocoa that would cause farm-gate prices to fall. At the macro level, the most effective way to raise cocoa farmers' incomes is to create conditions for them to diversify away from cocoa.

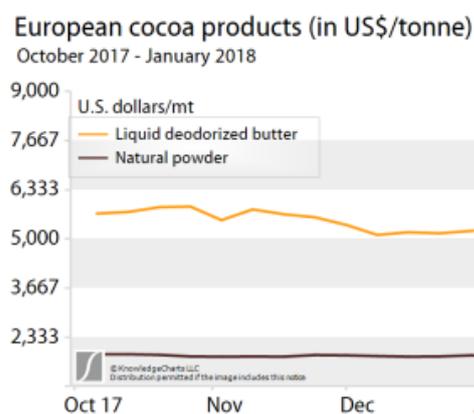
This does not necessarily mean that all farmers should aim to combine cocoa farming with other types of farming or other income generating activities. Rather, the way forward would be a ‘dual transition’ whereby the farmers that remain in cocoa would become (much) more productive, while many other cocoa farmers will diversify away from cocoa. Such a transition would require significant improvements in farmers’ access to information, training, infrastructure, and finance.

Developing a good security net for farmers to make the transition and overcome temporary drops in income will also be crucial. Most likely, cocoa producing governments in West Africa will not be able to make this transition on their own. Given the importance of diversification as a strategy to reduce poverty among cocoa farmers, stakeholders in chocolate-consuming countries (governments, companies, NGOs) should review the programmes they support that are cocoa specific, because these increase the dependence of farmers on cocoa. Given that world market prices are volatile, this dependence could lead to lower and more volatile farmer incomes and government revenues. The Dutch government is already supporting institutions such as Solidaridad and IDH, the cocoa sector programmes of which increasingly recognise the importance of diversification. Going one step further, cocoa consuming country stakeholders should consider supporting or facilitating the development of diversification strategies of cocoa producing countries through private sector and financial sector development, as opposed to sector-specific development. The type of support could range from financial support to capacity building support to farmers, SMEs, financial institutions, or national governments.

Supply and demand situation

Despite some uncertainties prevailing on the crop size at the start of the 2017/18 crop season, arrivals have gained pace over the weeks in the world’s largest cocoa producing country. As at 4 February 2018, cocoa beans arrivals at ports in Côte d’Ivoire were estimated to have reached 1.179 million tonnes up from 1.175 million tonnes compared to the same period last season. Nevertheless, facing the threat of Cocoa Swollen Shoot Virus (CSSV) in the main cocoa producing areas in Côte d’Ivoire, the Conseil du Café et du Cacao (CCC) decided to undertake a three-year maintenance operation consisting of uprooting 300,000 hectares of diseased orchards. According to news agency reports, this operation could reduce Côte d’Ivoire’s production capacity by 150,000 tonnes over the forthcoming three years. At the time of writing, cocoa purchases in Ghana are reported to have reached 560,000 tonnes (30,000 tonnes below last season) since the start of the season.

Chart III: European cocoa products in US\$/tonnes
October 2017 – January 2018



On the demand side, Chart III shows that since the start of the 2017/18 crop year, while powder prices remained stable, cocoa butter prices followed a near upward trend and stood at over US\$5,000 per tonne. This reflects the increasing demand for cocoa recorded in recent months as reported by the main regional cocoa associations for the fourth quarter of 2017. Fourth quarter 2017 data published by the European Cocoa Association showed an increase in demand from Western Europe by 4.4% and the Cocoa Association of Asia figures depicted a rise in grindings by 4.24% while North America’s demand retreated by about 1.28%, according to the National Confectioners’ Association.

Chocolate manufacturing and cocoa processing are concentrated industries dominated by a small number of large multinational companies, and most cocoa farmers in developing countries live below the poverty line. This report explores to what extent market concentration is responsible for the low cocoa prices paid to cocoa farmers.

The results show that market concentration among chocolate manufacturers and cocoa processors is not the key cause. Instead, the main reason for the persistent poverty among cocoa farmers is the fact that most of them are price takers, with little or no market power and a lack of alternative income sources. Without such alternatives, they will continue to produce cocoa even at very low prices.

Most chocolate is manufactured, processed and consumed in Europe and the United States. The Netherlands is the second largest cocoa processing country worldwide, with around 15% of the world’s cocoa arriving in Amsterdam for processing in the Zaanstreek. The vast majority of cocoa is produced by smallholder farmers in economically less developed countries around the equator, mainly in West Africa and Indonesia. Many NGOs, projects and initiatives have

attempted to raise awareness of the often extreme poverty among cocoa farmers, particularly in West Africa.

One of these initiatives is called the VOICE network, a network of NGOs that aims to reform the cocoa sector by voicing the concerns of cocoa farmers. The VOICE network publishes the Cocoa Barometer, a document that provides regular information on the recent state of sustainability in the cocoa sector.

1. In 2015, the Cocoa Barometer argued that value added in the cocoa sector is distributed very unequally and linked this to the level of market concentration in the sector.
2. It was estimated that most money on chocolate is earned downstream in the cocoa value chain, by supermarkets, chocolate manufacturers and cocoa processing companies, with only a small share of the value flowing back to cocoa exporters and cocoa farmers.

At the same time, the Barometer showed that there was a high concentration among cocoa processing and manufacturing companies, suggesting that these companies have significant market power in the cocoa value chain. This apparent link between market concentration and cocoa value distribution caught the attention of Dutch civil society and Parliament. Background to this discussion was the fact that a number of mergers had recently taken place in the cocoa sector, particularly in the area of cocoa processing and cocoa trade. The increase in market concentration that resulted from these mergers could disadvantage cocoa farmers by negatively affecting the farm-gate price. In April 2015, the Dutch Parliament requested the Minister of Foreign Trade and Development Cooperation to investigate market concentration in the cocoa value chain and its relationship with poverty among cocoa farmers.

The liberalization of the cocoa sector in many African countries generated higher needs for information for cocoa farmers. The farmer is now entirely responsible in the process of decision-making and is often disadvantaged with respect to access to market information as compared to his counterpart. The farmer needs price information and prospects over three time horizons; that of the current price for negotiating his sales, intra-seasonal price prospects for planning the management of his current crop, and long-term prospects for making new investments in cocoa production.

The cocoa industry has generally a better access to financial and insurance instruments to cover itself against uncertainty. However, cocoa processing companies and chocolate manufacturers need reliable information on the price to pay for their inputs and to minimize cocoa storage costs. For long-term investment in cocoa semi-finished and chocolate production, they rely on information on cocoa production and consumption

prospects. The banking sector, which provides services in the fields of banking and insurance, also needs adequate information. At the end of the cocoa chain, market transparency assures that the final consumer obtains his chocolate product at a reasonable price and provides him with adequate information on the quality of the product.

Government control/free market

Most simply, governments can control the marketing system, fixing the price that the farmer receives. Ideally the fixed price should benefit farmers by protecting them from rapid falls in the world price of cocoa, and ensuring some stability in their incomes. However, there are other factors that may negate the benefits of a stable price. As outlined above, inefficiencies may increase marketing costs; there is generally a lack of transparency that may harbour corruption; and they can be an easy way for governments to obtain high levels of revenue from farmers.

In contrast, if liberalisation produces healthy competition among buying firms, this can increase efficiency and cut marketing costs. Taxes Even in liberalised systems governments can impose export taxes and other fees. For all the countries studied, export crops are an important source of revenue for the government, although to a lesser extent in Nigeria. Taxes on exporters will generally be passed on to farmers in lower farm-gate prices.

Exchange rate

A fixed exchange rate that is significantly different from the actual value of the currency can also affect the real price received by the farmer. Inputs As well as the price received for outputs (the cocoa produced), the cost of inputs (tools, seed, fertilizer, insecticides, labour) also affects a farmer's income, and this is affected by government policy, especially liberalisation of export crop marketing. Effects of liberalisation on producer prices in practice Criticisms that previous government controlled systems reduced the price that farmers received generally seem to be borne out by the figures. In 1995, for example, farmers received 89% of the FOB price in Indonesia, 94% in Malaysia and 82% in Nigeria. All of these countries had essentially free market systems. In recently liberalised Cameroon the farmer received 71%.

Promoting greater transparency in cocoa markets

A transparent cocoa market is beneficial to the stakeholder along the value chain, including farmers, traders, processors, chocolate manufacturers and consumers. Regarding cocoa farmers, who are the focus of this section on policy, it allows them to gain better access to information on price trends, consumer demands

and quality requirements in order to make optimal planting and marketing decisions. In Cameroon, improved access to such information has contributed to enhancing the capacity of cocoa farmers to negotiate better prices for their beans (Wilcox and Abbott, 2006).

Opportunities for the small scales farmers and SMEs

The increasing concentration in the cocoa industries is partly driven by the difficulties for small scale farmers, such as small traders and grinders, to compete fairly with TNCs, as the large scale farmers have better access to resources (finances, technologies, some international investors e.t.c) this implies that small players along the cocoa value chain need an encouragement and a supportive environment or community to remain in business and operate with big and well-integrated players. In producing countries, keeping these stakeholders in the industry would help to improve its competitiveness while improving more value added activities locally, which in turn could result in higher prices paid to cocoa farmers.

There is a need for more support to local players, in particular local small and medium-sized enterprises. Policy for farmers in cocoa sectors in order to sustain the economy of the producing country should address high cost of finance, high taxes on grinding operations and

tariff escalation on processed cocoa. Lessons can be learnt from the Malaysian cocoa sector, which has successfully moved away from its considerable dependence on cocoa bean exports in the 1990s to local value-added businesses today in which several local entrepreneurs are directly involved. This was possible thanks to systems of incentives, including an investment tax allowance or partial tax exemption for locally owned cocoa processing and chocolate manufacturing companies (ACET, 2014).

In most cocoa producing countries, promotion of local value-added processing would also necessitate improving access to reliable and cost-effective energy and developing better road and port infrastructure. Moreover, a growing middle class in cocoa producing countries offers promising market opportunities for domestic or regional processors and manufacturers of cocoa and chocolate products. This trend has recently been evidenced by the French chocolate maker CEMOI'S investments in a chocolate factory in Côte d'Ivoire targeting West Africa's growing middle class consumer market. In China and India, good demand prospects for chocolate may also serve cocoa producing countries in Asia. Developing local SMEs in cocoa sectors gives chances for farmers to face competition in the markets, as we know, competitions boost effort to be seen, boost out some ideas, everyone wants to be on top.

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Requirements for papers

- Papers are accepted in English and French. Good English and French spelling and punctuation are preferred. Papers should be written in a third person, impersonal style and any use of 'I/we' should be avoided.
- Papers should not normally exceed 10,000 words. All papers are refereed by acknowledged experts in the subject.
- Abstracts of approximately 300 words are required for all papers (abstract in English and French is required for articles written in French).
- Paper should include no more than 7 keywords.
- Papers should be compiled in the following order: title page; abstract; keywords; main text; acknowledgments; appendixes; references.
- The introduction should clearly define the nature of the problem being considered. The new contribution the paper makes should be identified and situated in relation to the relevant scientific literature and, wherever possible, the practical relevance of its results should be indicated. The "Regional Innovations" journal will publish papers that evaluate important topics relevant to new areas of emerging research and policy.
- All the authors of a paper should include their full names, affiliations, postal addresses, telephone numbers and email addresses on the cover page of the article. One author should be identified as the corresponding author. We wish for Review Articles to be written by experts who are personally committed to writing the manuscript, and therefore limit authorship to a maximum of 3 authors.
- For all papers non-discriminatory language is mandatory.
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- All photographs, maps, charts and diagrams should be referred to as "Figures", and should be numbered consecutively in the order in which they are referred to in the text. They should be prepared on separate sheets.
- Endnotes should be marked clearly in the text at a point of punctuation, and listed consecutively at the end of the paper. They should not be listed at the bottom of each relevant page.
- The full references should be listed at the end of the paper. They must include the names and initials of all the authors, the year of publication in parentheses, the full title of the paper (or book), the full name of the journal, the volume number and pages and, for books, the publisher's name and city of publication. The references in the text should be done in square brackets (for example, [2; 4; 15]).

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INTERNATIONAL CONFERENCE

“E-Commerce Strategies: Challenges and Perspectives”

21-22 November 2018

The aim of the conference is to involve a wide range of experts in discussing important trends and development of e-commerce and innovative strategies for sustainable development nowadays. Organizations around the world are contemplating alternative approaches to e-commerce, considering the national, regional and global implications of this new business tool. New technologies are changing on a daily base consumer habits and commerce models. As a result, a growing number of entrepreneurs transfer their business online and leading retailers are turning to the Internet in search of new customers and new ways to grow. The Conference carries forward spreading knowledge and awareness about e-commerce and its components in different countries.

Conference participants: scientists, PhD students, business, NGOs experts are invited to take part in the conference.

The conference will provide an excellent opportunity to disseminate, share and discuss the impact of university-university, university-business and business-business interactions.

Main conference topics for discussion:

- Current state and trends in e-commerce;
- Private sector involvement;
- Impact of the global and national crisis on the implementation of e-commerce strategies;
- Impact of strategic projects and programs on e-commerce development;
- Innovations, knowledge transfer and culture exchange in e-commerce and their influence on sustainable development;
- Public sector policy and partnership with private and tertiary sectors in the field of e-commerce;
- Networking in e-commerce;
- Regional organisations and e-initiatives.

Conference publication: the conference materials will be collected and published in a special volume of the Regional Innovations Journal.

The conference is organized by the Association “InterRegioNovation” and supported by the International Business Institute (Paris, France), the International Forum of the Territories (France), FRANCeXP Association (France), Association “Baltic InterRegional Development hub” (Latvia), Institute of Economy of the Academy of Sciences of Belarus (Minsk, Belarus), Department of Economic Cybernetics, Taras Shevchenko National University of Kyiv (Ukraine), Eastern-European Institute for Cross-Border Studies (Kharkiv, Ukraine), Ukrainian-Francophone Academic Centre (Karazin Kharkiv National University, Ukraine), Kharkiv National Medical University (Ukraine).

The conference fee is 20 euro.

Please submit the application with your thesis (2500 words maximum) before **November 07, 2018** to the Conference Committee at info@irn.center

Application form should include the names of authors, position, institution, post address, phone, e-mail.

The conference language is English but theses will be accepted in English and French.

The Organizing Committee is entitled to selecting papers to be presented at the conference.

Contact information:

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