

Property Value Information Systems (PVIS) : A Glocal Perspective

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SUMMARY

Our present paper is a tiny effort of a scoping study on the specific topic and that is property value information. It will try to explore few answers to the questions like what, why, where and how. The first two questions with concepts and rationale will be discussed here briefly because there are plenty of definitions available in professional and academic literature in the fields of economics, finance, law, administration, governance and political economy.

The concepts of property and its value cover a wide and diversified set of components including measurements, units, conditions, methodological issues, time and related factors. The process of BI especially of Geospatial business intelligence communities in predictive modeling, acceleration, workforce performance and standard conformance equipped with sophisticated knowledge and intelligence in practice.

Our third question that is where to find the property information just to mean the public or private knowledge hubs implemented within the framework of laws, regulations, methods, techniques, standards, responsible authorities, institutions, organizations and professionals. Some important points will be discussed here with due emphasis.

Finally, to know how includes a consorted and systematic process for selecting, developing and deploying a dependable IS platform comprising of IT applications, solutions technologies, policies, methods, procedures, data types, core databases, support databases, secured interfaces and related components as to meet the needs of the user community.

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1.0 INTRODUCTION

How big and profound the ocean is ! water, water and water everywhere in seas, bays, rivers, pastures, canals, tanks, ponds, jars, bottles , mugs even as drops, flowing, flowing and flowing and sometimes over flows cause floods. The present context of our everyday life experience can be compared simply with the existing universe of knowledge, the empire of information and the kingdom of data.

We live an information-soaked existence and information pours into our lives through television, radio, books, and of course, the Internet. The prevailing importance of data-driven thinking is unique. The rise of data-driven companies from Facebook to Walmart show us everyday how powerful the approach can be. But what does it mean in practice? And what are the benefits of adopting a data-driven culture within an organisation?

1.1 Glocal : Local and Global –The Empire of Knowledge and Information

Where or how to start? From any where, here, there or everywhere. That we call a location. An address which is unique. Same as we all have names and identities. Just we all are locals. Most of our activities are also local. But at the same time we have to think globally. Our modern day practitioners are habituated to be local actors with a global mind. Is it possible or how ? Yes, it is now quiet possible by technology, knowledge transfer and workable mindset.

1.2 The Data Driven Property Value

According to statistics, in developed countries, the value of land and real estates together with mortgages on properties is about 60-65 % of the national asset. The land and property related activities, including property developments, generating about the 30-35 % of the GDP. The value of mortgages on properties in developed countries is 30-35 % of the GDP. Hundreds of asset managers try to make strategic and tactical practices to determine portfolio and asset value from acquisition to sale, encompassing all aspects of the asset management life cycle in the process with a continuously updated vision of all real estate, financial and accounting information regardless of the physical location of the investments

As a survey revealed the strong link between financial performance and use of data, organizations can be empowered with data democracy in action. Information empowers and information frees people at all levels of society, regardless of their gender, their level of education or their status, to make rational decisions and to improve the quality of their lives. Here lies the rationality of inherent value of data and information. For this reason data specialists will remain an essential part of BI especially of Geospatial business intelligence

communities for analytical tasks particularly for predictive modeling, acceleration, workforce performance and standard conformance equipped with sophisticated knowledge and intelligence in practice. These reveal the prevailing justification of the property value information systems.

Information, as Gleick argues, is more than just the contents of our overflowing libraries and Web servers. It is “the blood and the fuel, the vital principle” of the world. Human consciousness, society, life on earth, the cosmos — it’s bits all the way down. The Information is not just a natural history of a powerful idea. It also embodies and transmits that idea. Information, in the socially important sense — stuff that is storable, transferable and meaningful independent of context — is neither eternal nor ubiquitous. It was a creation of the modern media and the modern state. The information explosion reckons the increase in bytes with the relentless procession of prefixes (kilo-, mega-, giga-, tera-, peta-, exa-, and now zetta-, with yotta- in the wings) that’s mirrored in the proliferation of smartphones, tablets, game consoles and windowless server farms.

2.0 REGISTRATION AND PROPERTY VALUE DATA COMPONENTS

Registration is a wider public sector exercise of any civilized country in the modern globalized world for making use of sequential, legal and systematic recorded data for personal, social, business and commercial or any other general needs to ensure evidence based transparency. It is a very important and influencing part of law discipline which embraces public life everyday. Over the centuries registration covers most of human and citizen activities ranging from birth registration to death registration (Razzak. Dr. M.A 2008). The formal registration system has evolved for more than three centuries into an approach that is being used to varying degrees in the modern civilized nations. While registration plays a crucial role in ensuring each country’s right to information, public sector information(PSI), property transfer, evidence, transparency and tax system throughout the world.

A leading international property consultant, H.D. Soto puts his comment on the issue as “Modern market economies generate growth because widespread formal property rights, registered in a system governed by legal rules, afford indisputable proof of ownership and protection from uncertainty and fraud so permitting massive low cost exchange, fostering specialization and greater productivity. It is law that defines the relationship of rights to people. Civilized living in market economies is not simply due to greater prosperity but to the order that formalized property rights bring.” (Hernando de Soto 1993).

2.1 The Data Distinction : Price, Market, Cost And Value

When estimating the value of land or property, appraisers make a careful distinction between the terms price, market, cost and value. The term price usually refers to a sale or transaction price and applies to an exchange: a price is an accomplished fact. A price represents the amount that a particular purchaser agrees to pay and a particular seller agrees to accept under the circumstances surrounding the transaction. Generally the circumstances of a transaction reflect conditions within one or several markets. A market is a set of arrangements in which buyers and sellers are brought together through the price mechanism. A market may be

defined in terms of geography, products or product features, the number of available buyers and sellers, or some other arrangements.

A real-estate market is the interaction of individuals who exchange real-property rights for other assets, such as money. Specific real-estate markets are defined on the basis of property type, location, income-producing potential, typical investor characteristics, typical tenant characteristics, or other attributes recognized by those participating in the exchange of real property. The market for new, single-family residences selling. These real estate-related expenditures are directly linked to the price of goods and services in competitive markets. For example, the costs of roofing materials, masonry, architectural plans, and rented scaffolding are determined by the interaction of supply and demand in specific areas and are subject to the influence of social, economic, governmental, and environmental forces.

The term cost is used by appraisers in relation to production, not exchange; cost may be either an accomplished fact or a current estimate. Appraisers distinguish among several types of costs: direct costs, indirect costs, construction costs, and development costs. Direct costs include expenditure on labor and materials necessary to construct a new improvement. They are also called hard costs. The contractor's overheads and profit are generally considered to be direct costs. Indirect costs incurred in construction refer to expenditure on items other than labour and materials. They include administrative costs; expenses incurred by the owner for professional fees, financing, taxes, and interest and insurance during construction; and lease-up costs, which are the net expenses of operating the project until it reaches a stable occupancy level.

Indirect costs are sometimes referred to as soft costs. Construction costs, or the contractor's bid price, normally include the direct costs of labor and materials plus the contractor's indirect costs. Development costs are the costs involved in creating a property, including the land, and in bringing it to an efficient operating state. They are distinguished from the costs of constructing the improvements. Development costs include the profit of the developer or entrepreneur who brings the project into being.

2.2 Property Data Relationships : Price, Market And Property Value

Price, market, and cost relationships also incorporate concepts of value. Value can have many meanings in real-estate appraisal; the applicable definition depends on the context and usage. In the market-place, value is commonly perceived as the anticipation of benefits to be obtained in the future. Because value exists at a given moment, an appraisal reflects value at a particular point in time.

Value at a given time represents the monetary worth of property, goods, or services to buyers and sellers. To avoid confusion, appraisers do not use the word value alone; instead they refer to "market value", "use value", "investment value", "assessed value", or other specific kinds of value. Market value is the focus of most real-property appraisal assignments and its estimation is the purpose of most appraisals.

2.3 Locational Value Profiles for Land and Real Estate : Using Support Data

The valuers should identify the way that all the property should be used and be based on the predictable requirements of the community. The basic outline plan for a given area should then specify for finding justified value:

- i) Areas to be in compliance with building regulations
- ii) Commercial areas for the supply and distribution of goods and services;
- iii) Public areas with facilities for hospitals, schools, churches and cemeteries, serving the medical, educational, religious, social and cultural needs of the community;
- iv) Route ways for local major and minor roads and for long distance transport, and areas for parking lots;
- v) Areas for railway and tramway services;
- vi) Areas for utility infrastructure, including the main networks for water, gas, electricity, and central heating;
- vii) Areas for sewage, waste management and refuse disposal, and for waste-water purification;
- viii) Parks and gardens, sports grounds, playgrounds, camping sites, and bathing places;
- ix) Water areas, harbours, areas for water management, and areas for coastal ; and river protection against high waters;
- x) Landfill sites and mining areas;
- xi) Agricultural and forest areas;
- xii) Environmental protection areas, and sites of special scientific interest;
- xiii) Other areas to meet the needs of the community or town;
- xiv) The type of buildings;
- xv) The manner of construction and the position of structures;
- xvi) The minimum permitted dimensions of any parcel (width, depth, area) and the maximum size of parcel;
- xvii) The maximum permissible number of flats in any housing unit;
- xviii) Areas for the construction of housing that will be completely or partially financed out of public funds to meet social needs;
- xix) Areas for housing groups of persons with special housing requirements;
- xx) The precise boundaries of commercial and industrial estates;
- xxi) Areas to remain uncultivated as a reserve for future development;
- xxii) Public and private green areas such as gardens, private permanent plots, sports grounds, playgrounds, camping sites, bathing places, cemeteries, etc.; and
- xxiii) Areas with other purposes in accordance with development plans and other regulations.

2.4 Property Value Data with Hedonic Fluctuation Factors

Changes in urban land use will take place as a result of the implementation of new urban plans. Such plans may be prepared either to accommodate urban expansion, or to create new towns in accordance with resettlement schemes, or to improve the existing environmental infrastructure. Redevelopment occurs where general improvements are needed to the urban environment, for example to alter traffic flows or to attract real property investments; or where urban centres need to be substantially rebuilt with major social and political changes.

Physical planning can result in value being added to real property through improvements to buildings and their associated infrastructure, or by permitting the change of land use for example from agriculture or forestry to residential or commercial purposes. Physical improvements to buildings make only small differences to the market price in comparison to changes in the permitted use. Sometimes referred to as betterment, the increase in value brought about by formally permitting the change in use of land is often proportionally very large and may be subject to specific taxes. Conversely, there is rarely compensation for “worsenment” when the characteristics of property are adversely affected, for instance by a decision to build a motorway or airport nearby.

2.4.1 Hedonic Regressive Property Value Data for Degradation and Climate Change

The Degradation factors are as follow:

- Soil erosion by water and wind (gulying, loss of top soil, mass movement), river bank erosion, offsite degradation, deposition of sediments downstream, flooding, siltation of waterways);
- Physical deterioration e.g. compaction, sealing and crusting, water logging, subsidence i.e. drainage of heavy soils, loss of productive function e.g. change in land use to quarrying preclude agriculture production;
- Chemical degradation: fertility decline/reduced , acidification, soil pollution (toxic materials and waste dumps), salinity;
- Water degradation: Acidification, change in water quality and quantity, reduction in buffering capacity of wetland for flooding and pollution; and
- Biological degradation: reduction in vegetation cover i.e. increase in bare soil ,loss of habitat, detrimental effects of fire, quality and species composition.

2.5 Sustainability Checklists for Processing Green Value Data

Where sustainability issues are relevant to the valuation, the valuer will have to collect appropriate information, appraise it and take it into account in his report, either as aspects within the usual structure of his report or as separate sections, with or without appendices, according to the case. The diversity of properties and the developing nature of sustainability combine to mean that no general check list can be exhaustive but it may, according to the property, be relevant to consider some or all of the following non-exhaustive lists of points.

Alongside the usual description of the property, factors to consider might include: (i)Construction materials; (ii)Any contamination of properties such as brownfield sites for development;(iii) Risks of natural disasters such as flooding, earthquakes, or avalanches; (iv) Compliance with relevant building standards; (v)Insulation and related features, its special features (such as heat bridgesor type of windows) and continuity in terms of durability, regional and legislative building standards;(vi)Nature and complexity of building services; (vii)Age and quality (efficiency) of the equipment in the building for heating, cooling and other purposes and so the feasibility of maintaining or replacing specific building components (such as an oil-fired heating system compared with an alternative system that may reduce overall operating costs);(viii) Energy efficiency, EPC ratings and

recommended measures for improving it, energy sources (renewable?) and net energy demand;(ix)Water efficiency, especially in locations with scarce water supplies, using grey water, recycling of water, rainwater harvesting, etc.;(x)Operating expenses;(xi)Floor area in terms of usability, adaptability and cost effectiveness;(xii)Impact on users' productivity and wellbeing;(xiii)Likely timing and cost of refurbishment;(xiv)Market attitudes towards sustainability and willingness to pay for green features;(xv)Requirements of legislation;(xvi) Possible financial support;(xvii) Relevant certifications or ratings and (xviii)Terms of leases (green-leases).

2.6 Major Property Value Standards And Professional Valuers

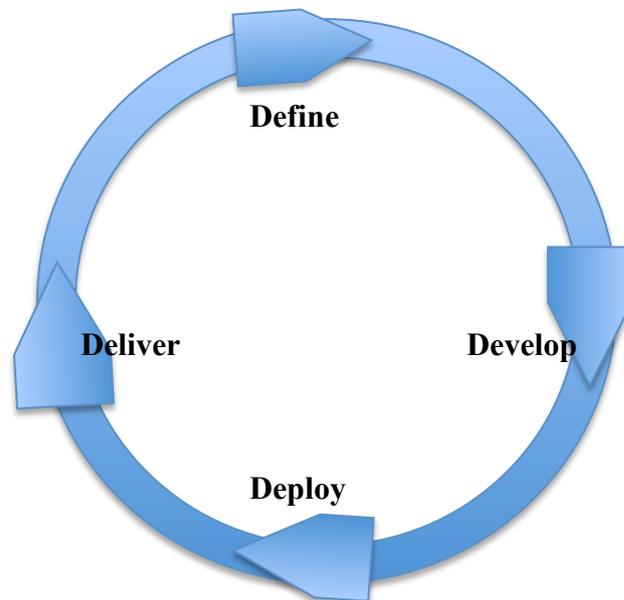
Consistency, objectivity, quality, validity, reliability, standard and transparency are fundamental to building and sustaining public confidence and trust in property value data systems. In turn their achievement depends crucially on possessing and deploying the appropriate skills, knowledge, experience and ethical behaviour, both to form sound judgments and to report opinions of value clearly and unambiguously to clients and other users of property value data..

Globally recognized high level valuation principles and definitions are now embodied in the International Valuation Standards (IVS) published by the International Valuation Standards Council (IVSC), International accounting Standards (IAS), ISO, FIG and RICS are remain devoted partner in the development of such universal standards, and not only fully embraces them itself, but also proactively supports their adoption by others around the world. IAS and IFRS standards and their application areas are as follow : a. IAS2 applies for Inventories, b. IAS11applies for Construction Contracts, c. IAS16 applies for Property, Plant and Equipment, d. IAS17 applies for Leases, e. IAS40 applies for Investment Property, f. IAS41 applies for Agriculture and g. IFRS6 applies for Exploration for and Evaluation of Mineral Resources. The European Group of Valuers' Associations (TEGoVA) also offers a good number of EVS standards for applying in practice in finding property value data systems.

3.0 PROPERTY VALUE INFORMATION SYSTEMS (PVIS)

Property value information are the scientific products or property value data (PVD) prepared by applying property valuation processes on evidence based property data (PD) with different classes of properties in a jurisdiction or neighborhood determined for a certain period of time. The system involves laws, regulations, authorities, institutions, scientific valuation methods, approaches and processes, techniques, tools, professionals, technologies, standards and related services for public and private use in local, national, regional and international communities and economies

The PVIS represents its core platform application of Property Value Data Model (PVDM)
The system requires 4-D implementation strategy.



Diagram—1 : PVD Model

Define identifies property value and IT concepts, issues, features, collection of primary and secondary data, data analyses, study and research results, existing knowledge base, , assessment of needs, cost, resources, risks, possibilities, documents, datasheets , terms and glossary, other related materials and publications.

Develop includes components, recording property value data, digitization of databases, plans, measures, maps, policies, laws, regulations, infrastructure, standards, codes, research, professional ethics, valuation methods, technologies, applications and solutions, techniques, tools, procurement, institutions, human resource and capacity building.

Deploy involves practical implementation programs for acquisition and preservation of property value databases for disseminating to the user community in its own web or mobile interfaces using public key infrastructure (PKI) through property or personal identification number (PIN) codes on an authentic and secured platform. The Implementation platform include the following steps (i)Enterprise Architecture,(ii) IS Strategy, Management and Acquisition,(iii) Information Standard and Compliance, (iv) Marketing Strategies, (v)Database Management, (vi) Systems Analysis and Design, (vii) IT Infrastructure with PKI, (viii) IT Project Management, (ix)Applications Development,(x)Business Process Management,(xi) Collaborative Computing, (xii) Data Mining,(xiii) Geospatial Business Intelligence.(xiv)Enterprise Systems,(xv)Human Computer Interaction,(xvi) Information Search and Retrieval. (xvii) IT Audit and Controls,(xviii) IT Security and Risk Management,(xix) Knowledge Management and Cloud enabled Big Data,(xx) Social Informatics.

Deliver makes all core property value data and support databases available for access from the PVIS.

The success of a PVIS is not dependent on its legal or technical sophistication, but whether it protects enhanced practice of property value data and rights to fair value adequately and permits those rights to be traded (where appropriate) efficiently, simply, quickly, securely and at low cost.

3.1 Documentation

While Market Value exists independently of documentation, a professional valuation under this standard should be properly recorded in writing in a way that is transparent and clear to the client in accordance with EVS4 and to anyone else who might reasonably seek to rely on it or appraise it.

3.1.1 Valuation Report

A Valuation Report means a document detailing the scope, key assumptions, valuation methods, and conclusions of an assignment. The report provides an informed opinion of value supported by a recognized basis or bases of valuation within the framework of law.

3.2 Measurements Used in PVD

Measurements is usually made and recorded using the metric system, though not always with international units. However, individual countries and sectors may conventionally use imperial or local measurements commonly adopted in national practice or in keeping with market practice. Subject to any legal provisions the choice of units and the number of decimal places is used to determine in the circumstances of the property and the needs that a client may be expected to have, a).Distances are measures of length in one dimension and should be expressed in metres (m), b).Areas are measures in two dimensions and should be expressed in square metres (m²) though markets such as the United Kingdom office market will use square feet (ft²).Gross areas are determined by using gross lengths. Net areas are determined by using net lengths, c).Larger areas, rural properties, and older building commonly have irregular shapes. Care should be taken to measure such areas accurately, perhaps by a land survey, or the use of digital maps. The areas can be expressed in hectares, though the United Kingdom commonly uses acres and some sectors in other countries may have their own conventional measures, d).Volumes are measures in three dimensions and should be expressed in cubic metres (m³). Gross volumes are determined by using gross lengths net volumes are determined by using net lengths.

3.2.1 Measurement Bases and Units

i) **Gross Floor Area (GFA):** Building costs (also for Insurance Valuation purposes), Site coverage, Planning and Zoning, ii). **Internal Floor Area (IFA) :** Building cost estimation, Industrial building, shop and warehouse agency and Valuation practice, iii). **Net Floor Area (NFA):** Agency and valuation practice and Service charge apportionment, iv). **Building**

Footprint: includes Land usage., v). **Building Envelope:** also includes Land usage.

3.3 Classification of Types of Plot Areas for Core and Support Databases

i). **Natural Landscape:** Forests, greens including individual plants, planted areas agricultural land which may be further divided by its use, quality or other characteristics including its qualification under the specific rules of subsidy schemes , natural expanses of water, other natural landscapes (sand, rocks),and land on the foreshore of tidal waters. ii). **Paved Areas:** Paths for pedestrians or cyclists, roads for light and heavy vehicles, parking areas including internal roads, sports fields and playgrounds including sport greens and swimming pools, railways. iii). **Structural Units:** Walls and other internal boundary features, protection systems (against noise and light), ramps, stairs, steps, bridges, catwalks, canopies, shelters, pergolas, water basins and fountains. iv). **Technical Units:** Water supply, waste water, gas supply, heating and cooling services, earth heat exchanger and other technical units.

3.4 Certificate of Value and Statement of Value

Have specific meanings in certain States in designating statutory documents. One common factor is that the documents require a simple confirmation of price or value, without any requirement to describe the context, fundamental assumptions or analytical processes behind the figure provided in countries where legislation or practice determines that a valuer must certify the amount of the valuation of the property, that will usually be by a short letter the contents of which will include: a).The client's name and address; b).Details of the property; c).The valuation date; d).The purpose of the instruction; e).The date of the Certificate; f).Any assumptions upon which the valuation is based and g).The name, address and qualifications of the valuer.

3.5 Major Interfaces And Disclosure : WM

The dissemination of PVIS includes three major interfaces: i). Physical, Manual or Analogue Interface covers all sorts of material and paper based property value information services, ii). Digital Interface includes: a. Web Interfaces and b. Mobile interfaces. Good explanatory constructs for data, information and knowledge, and related theory of their interaction, are central to efforts to generate valuable insights from the significant, evolving growth in data.

3.6 PVIS Database Preservation And Archives

Technical arrangements for the development and maintenance of the PVIS covered the different needs of countries at different stages of development. The major factor addressed was the identification of the need for, the appropriateness of and the phasing in of e-readiness, computerization and digitization into the data environment based upon need, geography or political dictate. Any move towards the adoption of a program of computerization should be subject to the availability of trained staff or procurement contractors, the access to maintenance and support staff, adequate communications,

dependable and trusted public and private key infrastructures (PKIs), authentic and secured transaction code (PIN) systems including suitable record management, sustainable preservation and data storage capabilities

The System includes Qualitative , Nominal, Ordinal, Interval, and Ratio data and maintains **Reliability ACID** means (**atomicity, consistency, isolation, durability**) a set of properties that guarantee that database transactions are processed reliably. PVIS Databases are collection of data for one or more multiple uses. These databases are usually integrated and offers both data storing and retrieval following Edgar F. Codd's Rules of relational databases (RDBMS).

Microfilming is an important tool for maintaining a backup record of title and cadastral map records. However it is still a manual system with often slow access time. Video imaging, records images of title and cadastral maps on video laser disks provide very good archiving of records and rapid access and copying. However the records have no intelligence since they are simply images.

3.7 Methodological Approaches : Property Value Database Segments

Property value data bases types are as follow : i) Market Value Database (MVD) , ii) Assessed and Appraised Value Data (AVD), iii) Price Value Database (PVD), iv) Cost Value Data (CVD), v) Rated Value Databases (RVD), vi) The Real Property Value Database (RPVD), vii) Hope or Future Value Database (HVD), viii) Best And Highest Use Value Database (BUVD), ix) Assumption and Special Assumption Value Database (ASVD), x) Alternative Use Value Database (AUVD), xi) Forced Sale Value Database (FSVD), xii) Transaction Costs Database (TCD), xiii) Tax Bases Databases (TBD) ,xiv) Synergistic Value or Marriage Value Database (SVD) , xv) Investment Value Database (IVD), xvi) Mortgage Lending Value (MLVD) Database , xvii) Insurable Security Value Database (ISVD) Depreciated Replacement Cost (DRCD) Database . xviii) Trade Related Property Value Database (TRPVD), xix) Development Property Value Database (DPVD), xx) The Existing Asset Value Database (EAVD) , xxi) Green Value Database (GVD) , xxii) Degraded Property Value Database (DPVD), xxiii) Added Value Database etc.

3.8 Involving Geospatial Business Intelligence with PVIS

A data warehouse is a subject oriented, non-volatile, integrated, time variant collection of data in support of management's decisions. Common functions of business intelligence technologies are reporting, online analytical processing, analytics, data mining, process mining, complex event processing, business performance management, benchmarking, text mining and predictive analytics. What is geospatial data and geospatial analytics? When people refer to geospatial data, they are often describing address-related data (a specific address, point of interest, ZIP code, and so on). This data can be matched to a specific latitude and longitude using a process known as geocoding.

Geocodes for addresses and points of interest can also be integrated with other data sources to enhance analysis in dashboards, visualizations, and more advanced modeling. The Geo

Database is a collection of geographic datasets, works in concert with ArcGIS software to provide a rich framework for modeling attributes, spatial and temporal relationships, and transactions. Best practices for data modeling and analysis by addressing spatial integrity, attribute integrity, work flow, and scaling. It clarifies geographic data modeling concepts of the geo-database information models. Geospatial data, sometimes referred to as location data or simply spatial data, is emerging as an important source of information both in traditional and in big data analytics. Geospatial data and geographic information systems (GIS) software are being integrated with other analytics products to enable analytics that utilize location and geographic information. Such analytics are also moving past mapping to more sophisticated use cases such as advanced visualization and predictive analytics. Geospatial data sources include: a). Global positioning system (GPS) data and b). Remote sensing data.

3.9 Database Deployment Software and Applications

Organizations store feature data in a structured file format such as Autodesk spatial data file (SDF) or SHP. With SDF, organizations benefit from the power of a spatial database without the cost or management overhead. Then organizations can easily extend the reach of their information by using a web mapping application such as Autodesk Map Guide Enterprise to deliver powerful, easy-to-use online maps and related information to audiences of all sizes.

“With Topobase and Oracle Spatial, we no longer have to maintain multiple data sets, and we have reduced the risk of data entry errors. Autodesk Geospatial makes it easy for engineers and designers to manage and share mapping data—such as regional scale data sets, cadastral information, and utility network data including pipelines, transformers, and valves. Additionally, teams can import and export data sets from many different CAD and GIS file formats—such as ESRI Shapefiles, MapInfo TAB files, MicroStation DGN, and raster data from multiple coordinate systems—and combine it with DWG files and have the information overlay properly.

Organizations share spatial data with other departments and applications, making spatial data a central part of its IT ecosystem. In this stage, GIS data and functionality get woven into other business systems, integrating with assessor databases, permitting systems, ERP systems, and more. The spatial application server supplies geospatial intelligence and data to these other applications. Autodesk, resellers, partners, and system integrators build powerful solutions to meet the organization’s specific business goals and processes. Autodesk Topobase provides sophisticated solution modules that make it easy for organizations to establish and manage the database deployment. By moving up the geospatial value chain, organizations increasingly leverage their geospatial data for a variety of business functions. organizations gain the ability to organize data effectively, implement real-world coordinate systems, and work with larger data sets. They deliver increased scalability and security, ability to complete long transactions, and integration with other systems.

Organizations need to move from a file-based environment using DWG, SHP, or SDF to a spatial database environment using the full functionality of a relational database management system (RDBMS). With an RDBMS, hundreds or even thousands of people can create, edit, and manage the same data. With a full RDBMS, organizations get more scalability, as well as

added security and the ability to create more sophisticated data models. Using FDO Data Access Technology, Autodesk Geospatial products work natively with spatial data stored in Oracle, Microsoft SQL Server and MySQL, as well as with ESRI's ArcSDE middleware. As a result, organizations are able to fully use the security, scalability, sophisticated data models, and multi-user read/write power of an RDBMS. AutoCAD Map 3D provides tools that make data and schema migration from SDF or SHP files to a full-scale RDBMS easy.

4.0 PRIVACY AND SECURITY

5.0 COPYRIGHT

6.0 RECOMMENDATIONS

7.0 CONCLUSION

The Entire effort has been devoted to materialize the vision toward achieving the property value information systems as an easy and accessible platform for prompt decision making at all levels of public, private, business and economic sectors. Further more incessant research efforts are also vital to enrich the system in practice. Our pragmatic optimism invites the practitioners' communities to move forward as to find the solutions to put in practice with a shared, consorted and a well communicated network in the near future.

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Biographical Note

Dr. Mohammed Abdur Razzak is an expert, author, Registrar of Lands and Real Estate, Member Secretary(key role) to the District Valuation Committee (DVC), a selected member to the Regulatory Reform Commission for its International Visiting Team and self-motivated researcher in the fields of property registration and information systems currently working around twenty years at the Registration Department under the Ministry of Law, Justice and Parliamentary Affairs of Bangladesh Government where his main job functions include:

property registration, preparing property value databases, preservation of records and archives and systematic delivery of property information services. He started his career as an Executive Editor to the Dhaka Post--an English weekly magazine published from Dhaka, Bangladesh. Then he joined as a college lecturer and worked for several years. He pursued his Ph.D in the year 2008 and joined numerous national and international conferences, seminars, workshops and training events such as E-ASIA, International Conference on Transparency and Accountability, World Urban Forum, World Social Forum, and many more.

The most provoking book *Registration and Information Systems—Toward an Empirical Development in Bangladesh published in 2011 by Amazon.com* where the author include property valuation and public finance chapters proven to have vital importance in developing countries like Bangladesh. And preparation of a manuscript on *Property Value Information Systems* is underway and will be ready for publication very soon. A good number of property related video presentations aired on leading TV channels in the country and journal articles on scientific valuation of properties have been published time to time.

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