

Fit-for-future Land Administration with Sustainable Transformation

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SUMMARY

Land Administration is no longer immune from the inevitable progress of change and citizen expectations. Traditional approaches of big-bang solution delivery are failing to keep pace. Data volumes are ever increasing and considerable time and effort and cost is spent on migrating information to the next “new system”. However, it is also true that a large proportion of land information changes infrequently – many titles/parcels will not materially change across the lifetime of one or more systems. This paper explores an alternative approach of accepting change and variability in data enabling sustainable fit-for-future solutions.

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1. DRIVERS FOR CHANGE

In our rapidly changing world, expectations of the land authority by both citizens and governments are ever increasing. Good land administration is now rightly understood as fundamental to improvements to citizens, society, government and business; but citizen expectations of speed and transparency are set by their experience of buying from Amazon and interacting with Facebook.

Furthermore, governments have a growing need to improve the way the land markets work and are placing pressure on the land authorities to enable transactions to take place more rapidly and for lower fees, while continuing to expect the certainty and assurance that the land authority brings. Land administration can no longer operate in isolation, it is part of complex interaction with planning, construction, utilities, buildings management, finance, insurance and taxation amongst others – all of which both consume and supply land information.

One thing is certain – tomorrow’s needs will be different from today’s; and land authorities must build systems and processes that enable change rather than constrain it.

2. TRADITIONAL APPROACHES ARE FAILING

To date, this problem has been managed by simply avoiding change – systems are replaced in big upgrade cycles of ten, fifteen or twenty years: the traditional approach to delivering land administration solutions is one of high-risk projects that have big-bang go-live moments, typically taking place after substantial data migration has taken place.

Too many improvement projects have been seen to fail to deliver any benefits in a reasonable timeframe, if they deliver any at all. Where projects are successful, what is delivered is often obsolete almost before it goes live. We suggest that this approach is no longer fit for purpose, and as the rate of change increases, this approach becomes ever more unsuitable.

3. CHANGE IS INEVITABLE

We believe there needs to be a fundamentally different thinking in the approach to both delivering and operating land administration systems. This change in thinking is driven by the need to create sustainability in the delivery of the land authority’s services, and to enable the land authority to evolve the services they offer over time in response to the challenge of the inevitably changing environment ... and deliver value to its citizens fast.

When considering these challenges, there is a need for us to accept that data and processes will change over time. The drive for new services will in turn drive a need for additional and

better codified data. The arrival of new legislation and policy will change the processes that are in use to perform land transactions. The megatrends such as increasing urbanisation bring with them the need to move to 3D and 4D cadastres.

These changes drive us to reconsider the fundamental data models underpinning systems – looking backwards we can see endless examples of where jurisdictions are already having to manage “old” data alongside “new” data – such as scanned paper records alongside vectorised maps; data captured under new legislation alongside data captured under older legislation; and looking forwards we can see the advent of 3D bringing with it yet another data model.

Rather than seeing these things as a problem that the land authority would rather not have to deal with, we should accept that this kind of change is unavoidable: every land authority will have mix of new and old data to manage. Today’s “perfect” data model will be a legacy within a few years.

The same is, of course, true about the processes that are in play to allow land transactions to take place. The processes today will not be the same as the processes needed tomorrow – legislation and policy will change; new forms of transactions will be required with different data requirements. To compound the problem, the sometimes long running nature of these transactions does not mean that a new process merely replaces an old process on a Monday morning - the two processes need to exist side-by-side as the transactions running under the old process reach their conclusion with new transactions running on under the new process.

4. ACCEPT AND EMBRACE CHANGE

We need to look at the problem of data and process migration through a new lens of acceptance rather than avoidance. We propose that land authorities should move to a “transform when needed” approach to data migration which accepts that change is inevitable, and that data only needs to be in the new model when it is required for a land transaction.

We suggest that carrying out an “en masse” transformation and migration of data into “new” (fixed) data and coded process models every time change is required is no longer necessary or desirable given the need to deliver change more frequently. We further suggest that in fact to deliver change at the frequency that is becoming commonplace, it is unrealistic to attempt these large migrations given the volume and complexity of the transformations.

This especially applies when the current data is paper, scanned or poorly structured text records. Migrating such data into structured accurate records is expensive and very time-consuming. Making the migration a pre-requisite of moving to a new system adds cost and time before any business benefit can be delivered, and as noted before such projects can easily fail.

The evidence from a typical jurisdiction is that only half of register records is transacted on during the lifetime of a system, and as such any data transformation for these un-transacted properties is essentially wasted effort.

No. of properties	Percentage of properties that transacted in the last...			
	20 years	15 years	10 years	5 years
14,378,960	12,604,306	10,078,058	7,262,338	4,505,667
	88%	70%	51%	31%

The example above is based on analysis of price paid data as published by HMLR covering England & Wales. The data only covers residential properties and excludes certain categories of transaction, however it does show that only 51% of these records transacted in the last 10 years - our assumed typical life of a land admin system.

5. A DIFFERENT SOLUTION APPROACH IS NEEDED

We propose that a different approach is required, where solutions are designed that can support vagaries and evolution in both data and processes. This will allow data to be transformed only when needed such as upon a transaction on a parcel/title – perhaps supplemented by targeted systematic conversion for such things as urban regeneration.

We hypothesise that such solutions will succeed in delivering early business value and avoid the long, costly and unnecessary migration of data that rarely changes. Designed properly they will also support evolution with new processes and capabilities such as 3D, Smart Contracts, etc.

Such solutions will be sustainable. Furthermore, we believe this is entirely practical and achievable with the technology that is now available today.

REFERENCES

HMLR Price paid data 1995 to date - <https://www.gov.uk/government/statistical-data-sets/price-paid-data-downloads>

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BIOGRAPHICAL NOTES

John Clutterbuck

John is an experienced Solution Architect and Land Administration consultant with over 25 years' experience in designing and delivering solutions to government and national institutions on geospatial and land administration domains. John has a deep understanding of land administration legislation, cadastral and title systems, national challenges, aspirations, business processes, and the engagement with society.

John joined Ordnance Survey in 2016, having previously worked with Registers of Scotland for two years and Siemens/Atos on a variety of government-focussed assignments for 23 years. John was the Lead Architect for the Scottish Land Register System from 1995 to 2016 which included two major transitions for conversion from mainframe records and the Land Register Act 2012. John is the UK nominated representative for ISO LADM Revision II – working in liaison with HMLR (England & Wales) and Registers of Scotland.

Dave Stow

Dave Stow is currently Lead Enterprise Architect at Ordnance Survey where he is helping the business implement its strategy of delivering managed digital services. He has experience spanning over thirty years and ranging across utilities, finance, a technology startup, not-for-profit and public sector, and has lived and operated internationally. Dave has a proven track record of developing strategy to maximise business performance, and putting in place the teams and governance to ensure delivery against that strategy.

In his current role Dave has a special interest in how land administration can be improved as part of enabling macroeconomic growth, and he has spoken at a number of conferences on this topic, including a keynote at the Middle East / Africa Esri User Conference and at the World Bank.

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