



Data Maturity of an Organisation

	Innocence (Child)	Enthusiastic Cooperation (Idealist)	Administration/ Bookkeeping (Collector)	Central Management of Data (Tyrant)	Devolved and Data Driven (Mature Adult)
Overall Management of Data	"What's data management?"	"If we all pull together, we'll sort this out."	"If I know everything about the data, I'll be OK."	"If only people would do as they were told, it would be OK"	Key resource management function on par with Finance and HR. Different areas of data owned by different parts of the business.
Definition	Data not defined. This is not considered a problem.	Assumption that if data has the same or similar names, then it's the same data. Not worth the effort of definition since everyone knows what the data is.	Standardised definitions attempted. Data Dictionary maintained. Few people in the organisation aware of the dictionary.	Definitions with synonyms and homonyms agreed and signed off. CASE tool Data Repository records meta-data. Contents of data repository available to the whole organisation.	Definitions with synonyms and homonyms agreed, marketed and enforced by Owner.
Data Architecture, as-is and to-be.	Nothing. Data is not considered architecturally.	Different bits of the As-Is known by different individuals.	"As-is" documented	"As-is" and "to-be" documented.	Full architecture available and driving strategy. Organisation Data moves towards desired end-state.

This paper has been written by an independent consultant, John Amiry, and is intended as a guide to illustrate how progressive organisations can make real and tangible progress in exploiting their strategic resource known as data. The author is a recognised subject matter expert in the field of data architecture and strategic data management. Assessing a company's maturity and health in how it strategically manages and exploits its data resource is precisely an area where expert advice and guidance should be sought. Clients wishing to explore this area should contact Virtual Resources. The copyright in this work is owned by and remains the property of its author.

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Usage	Not considered.	Each user knows what data they use.	Not formally recorded with data model often produced in isolation.	Interaction with process, system and user documented.	Usage controlled and administered by Owner.
Quality	Not defined.	Not defined. Everyone thinks it's obvious, we need it "correct".	Not defined. Everyone has a different view.	Proposed, documented and measured but difficult to enforce.	Owner defines, measures and enforces data quality. Improvement initiatives for data.
Interaction with Process	Not defined.	Not defined.	Not usually defined. Occasionally high-level interaction is mapped as a CRUD matrix but rarely kept up-to-date.	Fully documented.	Process's use of data signed off by Data Owners. Data quality requirements may initiate process improvement.
System	Doesn't understand the distinction between systems and data.	Systems seen merely as a means of performing work.	Use by systems recorded but as an after the fact...	Systems manage data, use of "systems of record" but no enforcement.	Systems built to implement data as well as aid work. Permission for use of data by systems required from Data Owners.
System Development	Systems development driven by perceived problems, organisation improving work.	Systems development driven by perceived problems, organisation improving work. Any problems between systems will be sorted out by getting the right people together and some hard work.	If only we'd known about these problems before we started these systems	System design signed off by Data Group. Unless the project's late, in which case the data has to suffer.	Most of a project's data defined and agreed upfront, development method stresses re-use of data.

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Software Procurement	No consistent basis for software selection.	Software selection based on desirable features.	Software selection based on desirable features.	Software selection based on data recorded as well as system features.	Software evaluated on how it moves us towards the desired data architecture.
Systems Enhancement	Uncoordinated, addressing perceived problems.	Uncoordinated, addressing perceived problems.	Uncoordinated, addressing perceived problems.	Central group encourages systems to manage data but no enforcement.	Data Issues considered when planning system enhancements.
Duplication of Data	Unaware.	Unaware or seen as a positive advantage.	Passively recorded and regretted.	Restricted but problems with enforcement. Pro-active elimination of duplicated data not possible.	Uncontrolled duplication eliminated and controlled duplication restricted with pro-active moves to reduce level of duplication. Person wishing to duplicate data must justify design choice.
Procurement of Data	Not aware of external data sources.	Ad-hoc, according to perceived needs.	Tracked.	Coordinated but enforcement problems.	Proactive procurement with enforcement via owner. Procurement based on corporate use and re-use.
Business Planning	No consideration of Data	No consideration of Data	Awareness of implications via projects and existing problem set	Data implications assessed after planning.	Data considered during planning alongside other key resources such as Finance and Staff
IS Planning	Doesn't plan IS systems..	Doesn't consider data.	Data Impact assessed after project definition	Data Management Group consulted on data implications of IS plan.	IS plan driven by Data Strategy, amongst others.

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Ownership and Responsibility	None	None, except for system users.	Responsibility for Physical Dataset recorded.	Logical data owned by central group.	Single point ownership at Senior level.
Legal Compliance (e.g. Data Protection Act)	Unmeasured. Compliance addressed by policy statements.	Many talking shops, little progress.	Data partially documented, officer elected to be responsible for compliance with no responsibility for source data	We should have that responsibility, why didn't they ask us?	Full compliance with spirit and letter of the organisation's chosen approach to the law.
Data "Age" of the Organisation	0 - 4 years	5 - 11 years	12 - 17 years	18 - 30 years	30+
Mental State of the Organisation	Ignorance	Uninformed Optimism	Informed Pessimism	Psychotic	Mature
A Director's Quote	"We've got the data somewhere, and I am sure it's OK otherwise I'd hear about it."	"We are addressing the data problem by encouraging the right people to discuss the data"	"We know quite a lot about the data but there's not much we can do about it. Anyway, this is an IS issue, isn't it?"	"Bad data causes us problems. We trying to make the data better but we're not really succeeding."	"Data is vital to business success and plays a key role in the strategy of the organisation. We know the data we've got and the data we need and how we are going to get there. We are also looking to see what other data we could get and what competitive advantage we can create."

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Some Notes on the significance of the various terms used above.

	Definition of Term	Significance
Definition	The meaning of a particular item of data.	Without a consistent view of what we mean by an item of data, we cannot manage the data. May discover long-term conflicts between different areas of the business.
Data Architecture, as-is and to-be.	A model of the organisation's data, reflecting its nature and structure together with procedures, policies and strategies for the data. Usual versions of an architecture reflect the existing situation and the desired end-state	We need to express where we would like to be with our data and how we intend to achieve this otherwise we will be unable to assess any initiative that addresses data. Our data will merely be the result of our other actions.
Usage	A definition of who uses what data in the organisation.	Proof that data is necessary and the basis for cost justification. Best documented via business process and information need.
Quality	A definition of how good the data needs to be.	A complex area that employs some often misunderstood and easily confused terms such as ACCURACY, PRECISION, CURRENCY, COMPLETENESS and COVERAGE. Required quality may combine the needs of different parts of the organisation in a "LCM" subjective judgement. Widely varying quality requirements usually indicate different types of data.
Interaction with Process	The data actions performed by each business process.	Important since the only route by which the organisation can obtain data is via business process and problems with the quality of data may indicate flaws in and entail changes to business processes.
System	A combination of business processes for a high level purpose.	Often automated, a system is seen by data-naïve organisations as merely a means of performing work. The real advantage of a system is the proper collection, storage and dissemination of data.

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	Definition of Term	Significance
System Development	The means by which new systems are developed and implemented in an organisation.	Systems are notoriously expensive to change once built. Since all systems implement data via the business processes they support, their development is the ideal time to improve the data of an organisation.
Application Software Procurement	The purchase by the organisation of a "ready to run" application suite to support specific business processes or functions.	Special instance of systems development where pre-written software is purchased. Almost always the purchase is evaluated on what the software does rather than the data structures it employs to do it. Packages usually do state neither the quality standard for data they're supporting nor the keying systems used. Effectively package purchase comes with a hidden data architecture and somehow we will have to cope with it.
Systems Enhancement	Changes made to an existing system.	Changes made to existing systems should not be agreed to lightly and are best performed in a managed and coordinated way. These should consciously include changes to the way a system handles data. Usually, proposed changes are not evaluated and coordinated for data implications.
Duplication of Data	The recording of the same type of data in more than one place.	Data is best stored once and used lots. If data is duplicated, it can get out of step and lose credibility and value. Controlled redundancy is acceptable but comes with an overhead of increased effort. Uncontrolled redundancy is a heinous sin for which death is insufficient punishment.

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	Definition of Term	Significance
Procurement of Data	The purchase of a dataset.	Buying data from someone else presupposes that first, we see the world in the way they do, second that we wish to update our view at the same time and third that we trust them. Naïve organisations believe that all the other organisations know what they are doing with their data and they will inevitably gain from the purchase.
Business Planning	The act of determining the direction the organisation should take and the initiatives by which it should achieve the change.	Data is a CSF for almost all proposed changes but it is rarely considered during the planning process (unlike money or staff).
IS Planning	A general term covering the development of the IS infrastructure, standards and application landscape.	Directly affects what is possible for the data.
Ownership and Responsibility	The act of ensuring someone in an organisation is responsible for the quality of some or all of the data in an organisation.	
Legal Compliance (e.g. Data Protection Act)	Items of legislation that affect the organisation and have some significant data dimension to them (that's all of them, by the way!)	Unless there is the word data in the title of the act, organisations rarely assess the implications of legislation from a data viewpoint.