



S-Score: A New Tool for Standardizing Disparate Data Quality Measurements

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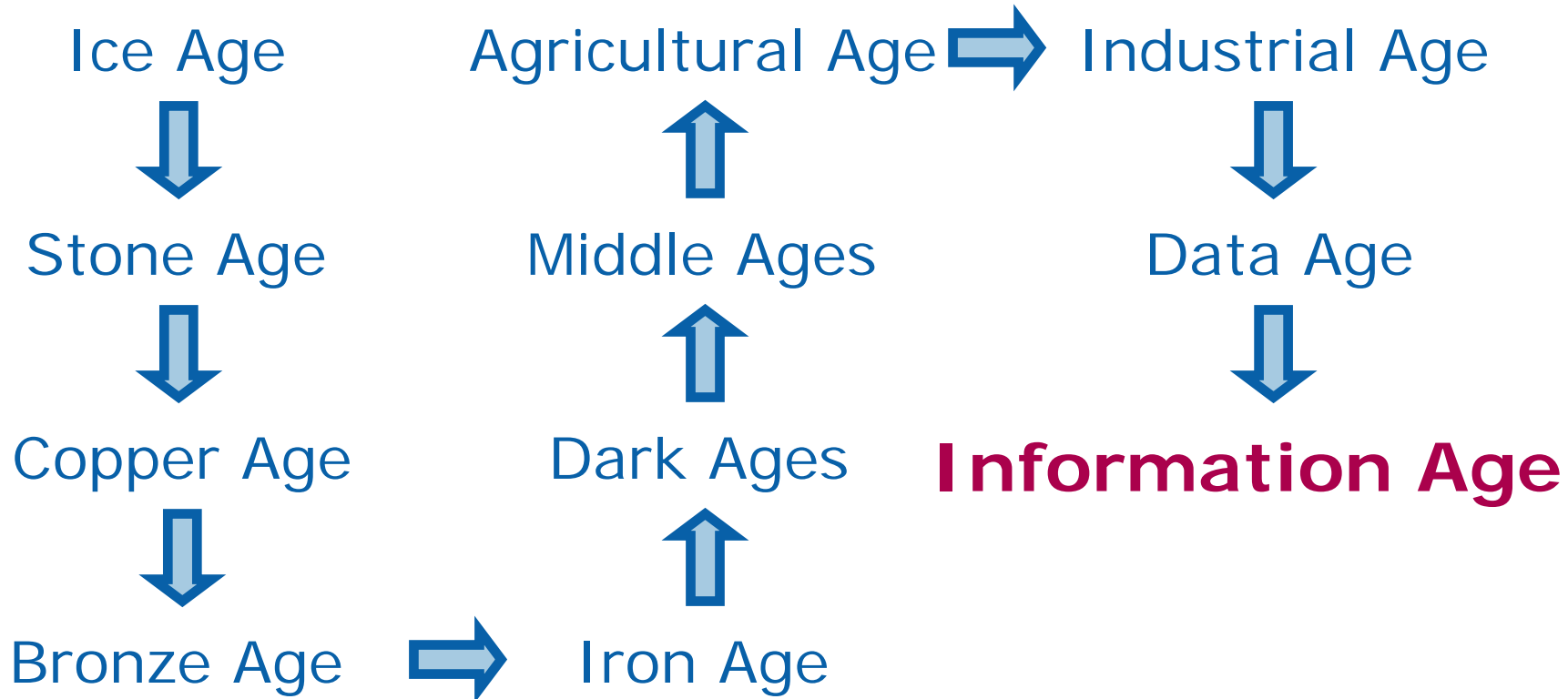
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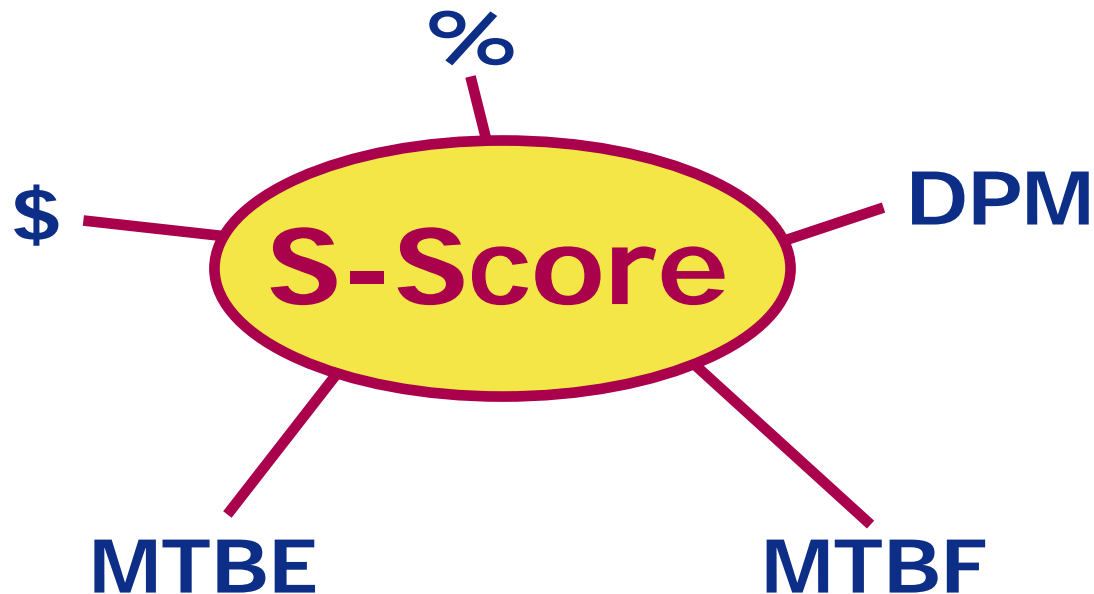
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Introduction



Problem Statement

How can we add different types of Data Quality measures together into an easily understood summary?



Agenda

- What is S-Score?
- The benefits of S-Score
- How S-Score works
- The challenges of S-Score
- How S-Score has helped Intel
- Summary
- Q&A

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What is S-Score?

- Stands for Standardized Score
- A method for combining disparate or unlike Data Quality measurements into a comprehensive score
- Capitalizes on tools and concepts that are widely used in other areas of business

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The Benefits of S-Score

- Enables a quick summarization of the health of your data
- Tells how far in or out of goal the Data Quality monitors are
- Provides the ability to drill down and identify what is really wrong
- Helps with the decision of where to assign resources to fix the right things

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How S-Score works

Overview – S-Score...

- Assigns a unit-less, or agnostic, score to each level of performance
- Uses basic statistical principles of normal distributions
- Is based on a scale of 0 to 100

How S-Score works

4 simple steps

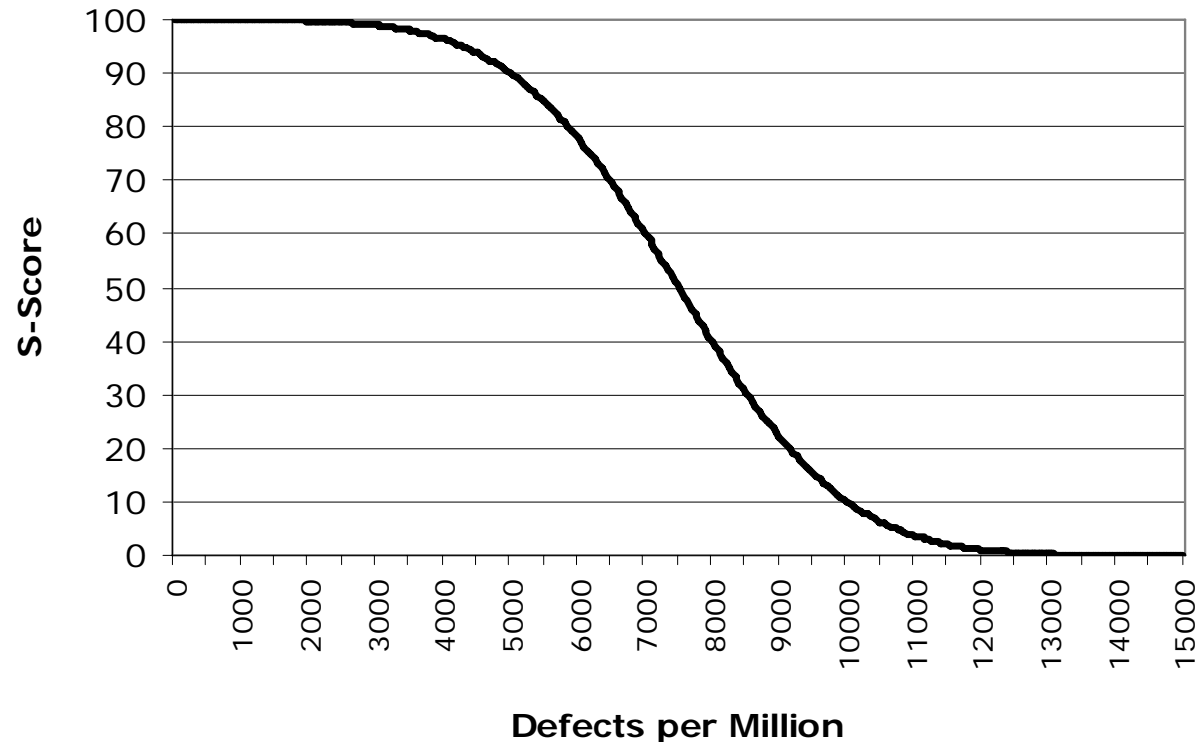
1. Scrutinize
2. Standardize
3. Symbolize
4. Summarize

How S-Score works

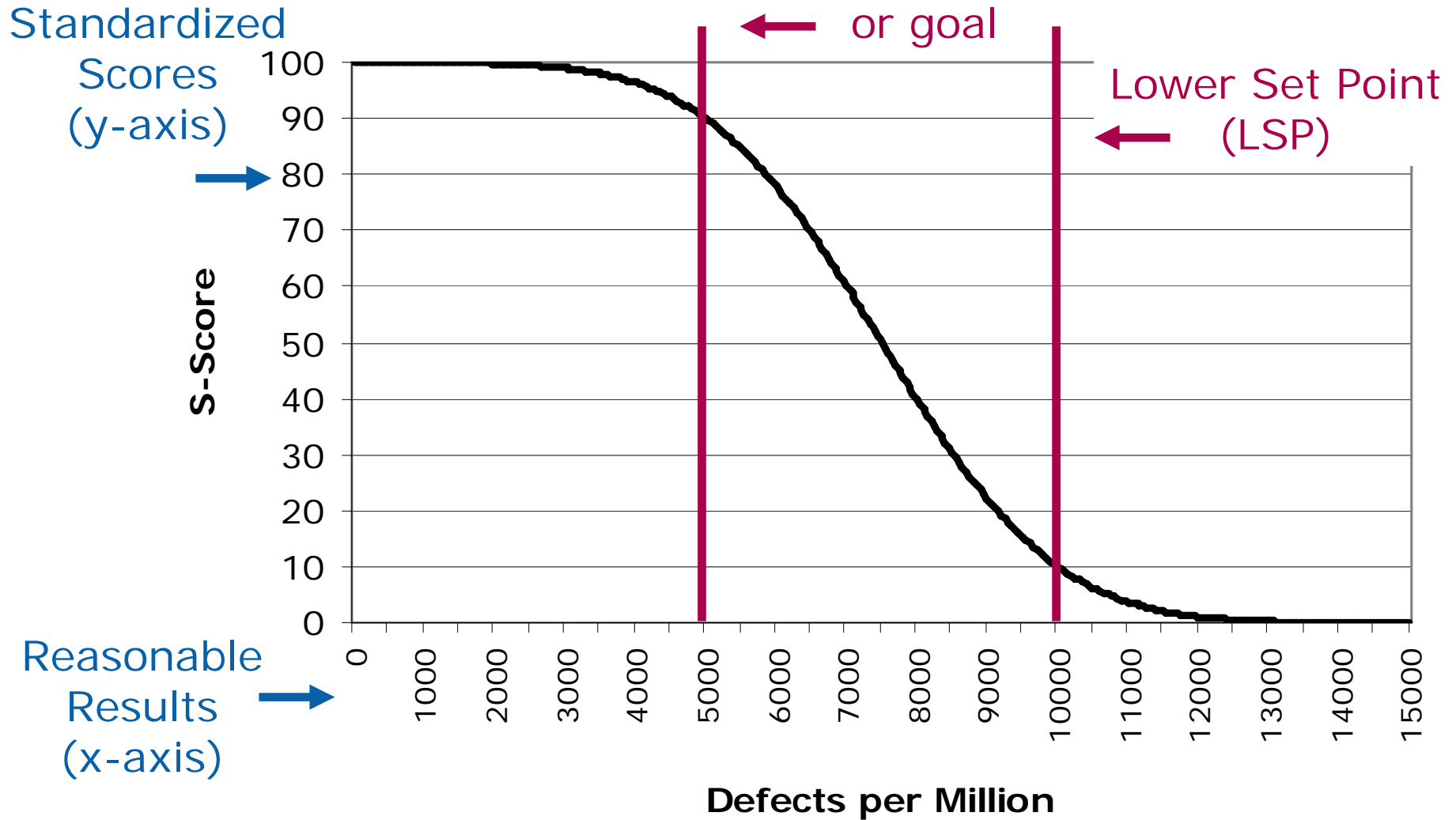
1. **Scrutinize** – taking an actual measurement of data against a goal
 - Create the monitor
 - Determine what is acceptable
 - What is the goal?
 - At what point will the data be completely useless or unreliable?
 - Take the measurement
 - Record the result

How S-Score works

2. **Standardize** – converting all reasonably-possible monitor results into standardized scores



How S-Score works



How S-Score works

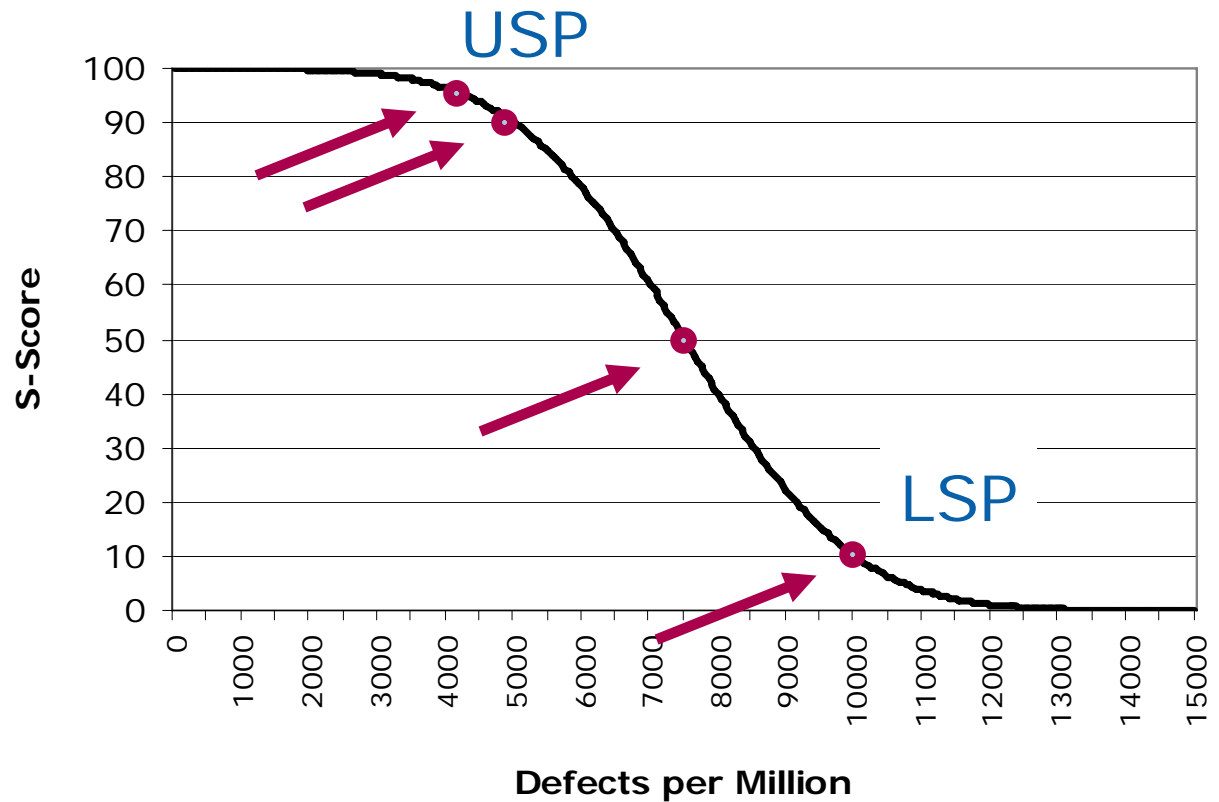
Formulas

- Upper Set Point = USP
- Lower Set Point = LSP
- $\mu = \text{USP}/2 + \text{LSP}/2$
- $\sigma = (\text{LSP} - \text{USP})/2.56$
- S-Score =
 $1 - \text{NORMDIST}(\text{Result}, \mu, \sigma, \text{TRUE})$

How S-Score works

3. **Symbolize** – assign a standardized score to an actual result

DPM	S-Score
5000	90
10000	10
4250	95
7500	50



How S-Score works

4. Summarize – roll up the scores

- Summarizing the S-Scores is rather simple using basic mathematical functions
- The difficulty is in determining the strategy for a summarization plan
- Two questions must be answered to define the strategy
 1. Which monitors best reflect my business and should be included?
 2. How influential is each of those monitors?

How S-Score works

4. Summarize, cont.

- Once the monitors have been selected and the weights determined, the scores can be rolled together
- There can be many levels of summarization
- Results can be grouped by
 - Data attributes (e.g., timeliness, completeness)
 - Business groups (e.g., Finance, Purchasing)
 - Product Lines (e.g., Intel® Pentium® 4 processors, Intel® Itanium® processors)

How S-Score works

A scorecard example

Finance Data Quality Scorecard									
WW4002		2006						Month End	
DATA TYPE	Goal	WW01	WW02	WW03	WW04	WW05	WW06	WW07	WW08
DQ Summary	90	53	62	72	78	81	84	88	90
Accts Rec Sys	90	23	50	74	90	92	92	93	91
	Complete	90	68	71	74	77	92	88	83
	Correct	90	0	46	68	98	96	98	99
	Timely	90	0	33	79	96	89	91	95
Accts Pay Sys	90	83	75	71	66	70	76	82	88
	Accurate	90	92	94	93	95	81	80	83
	Consistent	90	74	55	48	36	58	72	93

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Challenges of S-Score

- There are 2 paradigms to break...
 - 0 to 100 means 'percent'
 - 100 is the best; it's our goal!
- And 1 learning curve to ride!
 - 'So, how do you get the score again?'

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How S-Score has helped Intel

An example – a project to consolidate and align all the planning systems within the company

- Working model
 - Data Quality monitors were run weekly and recorded
 - Results were tracked throughout the year
 - Monitors that were out of goal were analyzed (root cause analysis) and the causes were fixed

How S-Score has helped Intel

- The Results

- Data Quality improved 50% during the project
- 16 of 17 monitors showed improvement from the first half to the second half
- 6 monitors showed improvements greater than 70%
- 1 monitor improved 99.8%, from 19,919 DPM to 33 DPM

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Summary

- S-Score is a methodology for adding different types of Data Quality measures together into an easily understood summary
- S-Score is based on standard statistical principles
- S-Score consists of 4 easy steps
 - Scrutinize
 - Standardize
 - Symbolize
 - Summarize
- By using S-Score, real improvements can be made in your Data Quality

Q & A

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