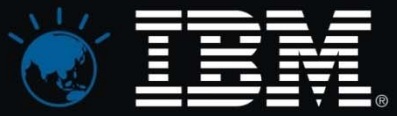
IBM Software Universe

Smarter Businesses, Smarter Industries.

8th March 2011, Pan Pacific, Dhaka.



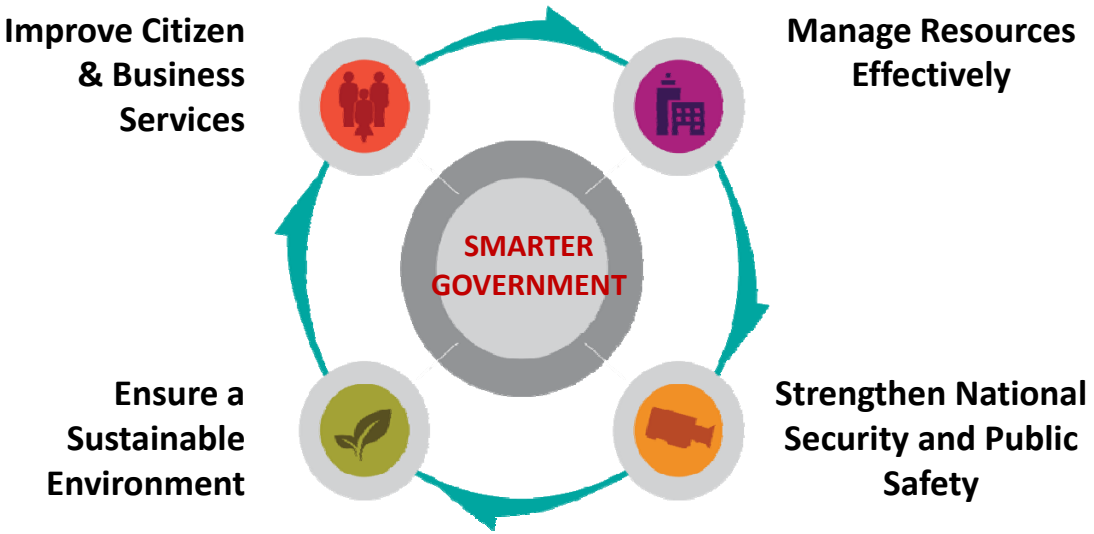
Data Reduction & Storage Management Transformation

Vishal Maheshwari

Country Manager, Tivoli Storage

IBM India South Asia

A Smarter City ….



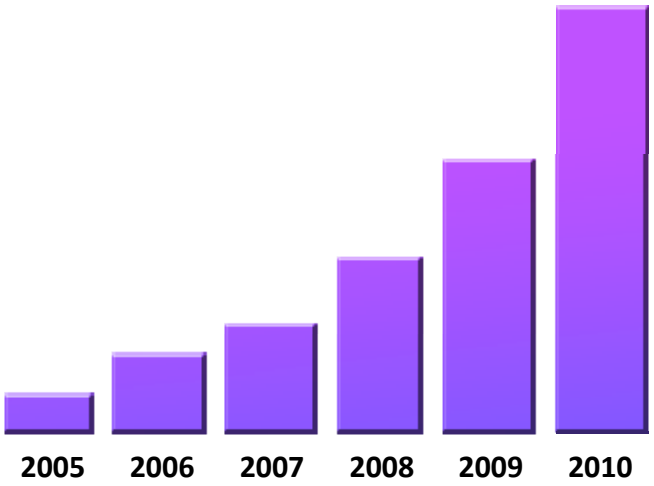
- Delivering BI for Business Value
- Advance Case Management
- IBM Industry Solutions: Helping Governments help citizens & businesses
- Connect & Collaborate
- **Data Reduction and Storage Management Transformation**
- Acquiring a Single View of Citizen
- Scalable Application Infrastructure for Citizen Centric Services
- Smarter Governance

got too much data?

And not enough (blank) to manage it all?

Time Money People Floor Space Electricity Air Conditioning

The tidal wave continues …



Data created and copied is expected to grow at 48% CAGR through 2011

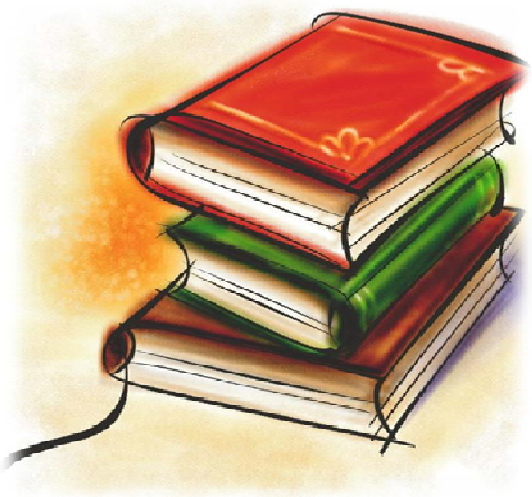
As digital information continues to explode, it is causing organizations....

- Lost revenues
- Lost customer confidence
- Embarrassment in the market
- Fines from contracts, government agencies
- CEO and CFO could go to jail

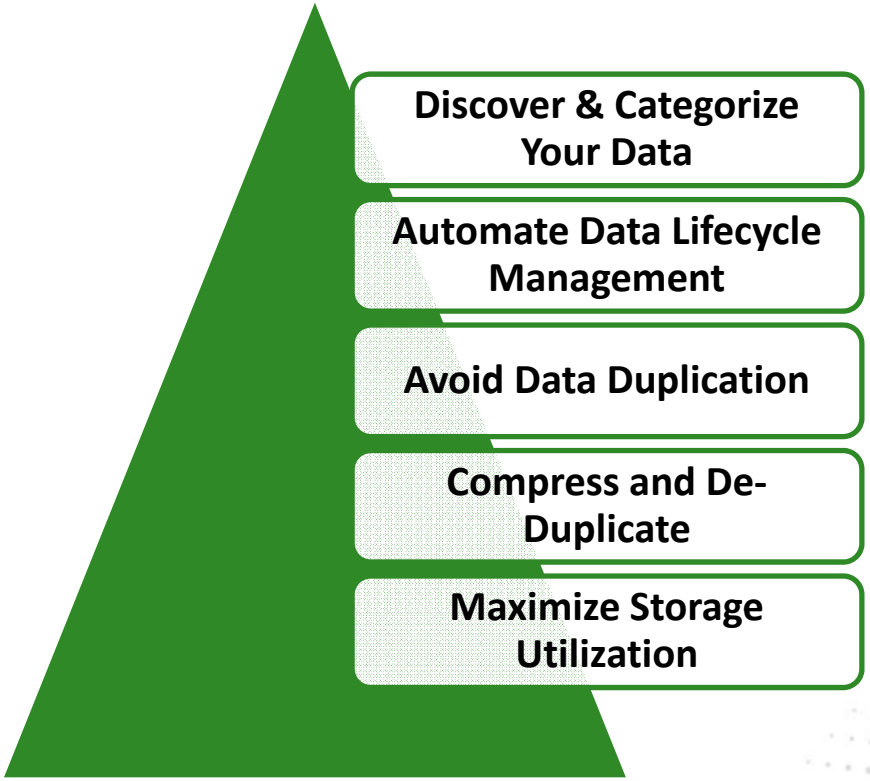
We Need to do More with Less, and we need to do it smarter

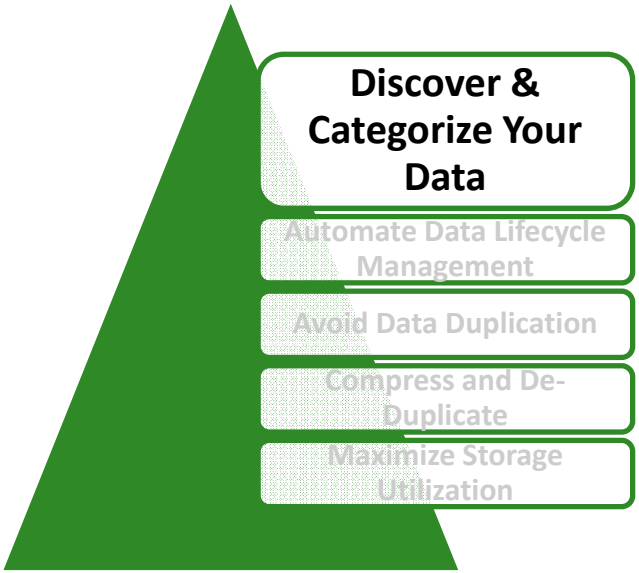
Source: Various external consultant reports

Surviving the tidal wave



IBM's holistic approach to data reduction can help you build a dynamic storage infrastructure that will intelligently improve service levels, reduce costs and manage risks



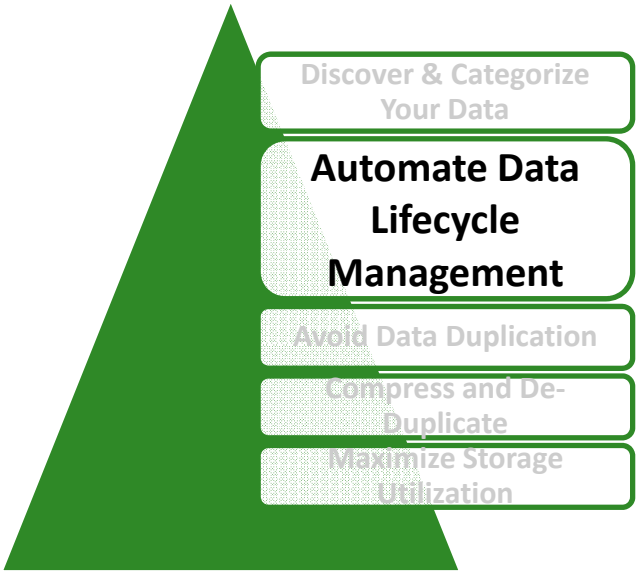


- Determine what you have before you try to fix it:
  - o Is some of your data a liability?
  - Categorize & then migrate or archive this data from production systems to
  - o Reduce capacity requirements and lower CAPEX and OPEX
  - o Improve backup and restore performance
  - o Help meet data retention and expiration mandates

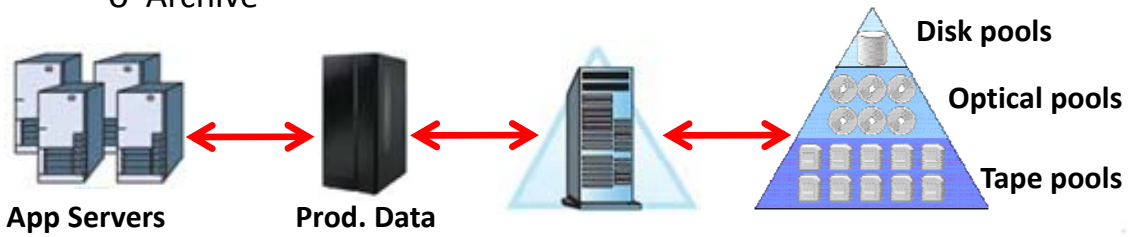
IBM Tivoli Storage Productivity Center for Data

Identifies data eligible for migration, archiving and deletion & provides:

- Date saved or last accessed
- Location and owner
- File type and size
- Duplicate files



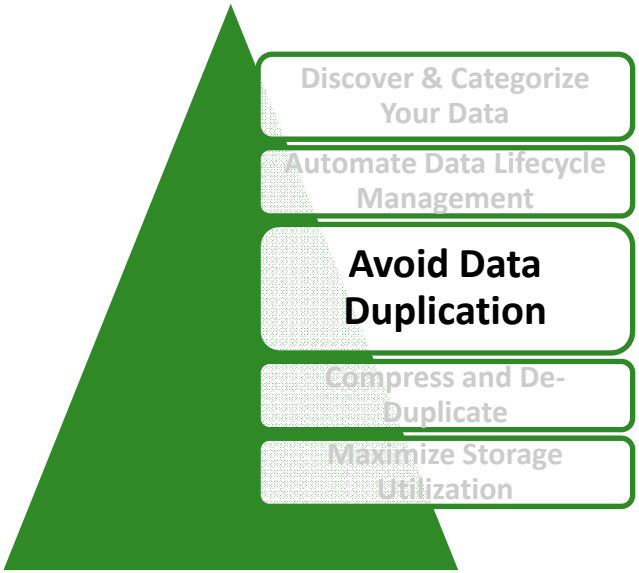
- Tired Storage – add to secondary capacity and not the primary capacity
- Data Lifecycle management
  - Regularly scrub production systems of old/stale data
  - Reduce the growth of primary storage – reduce CAPEX
  - Migration / Hierarchical Storage Management (HSM):
  - Archive



IBM Tivoli Storage Manager for Space Management

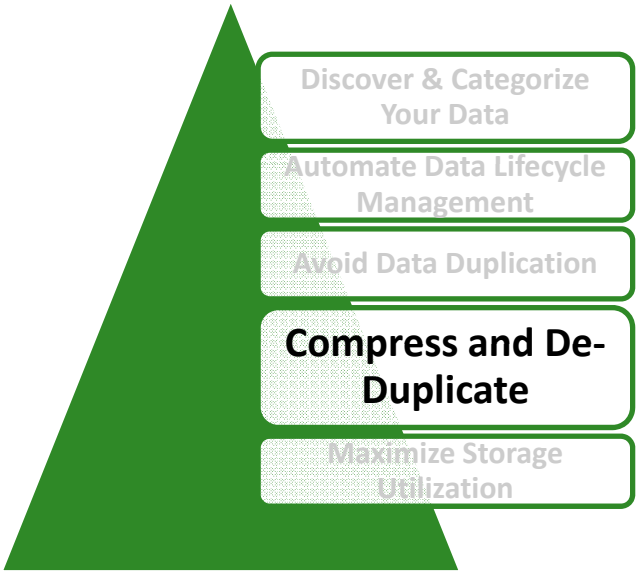
•Helps get control of and efficiently manage data growth and thus storage costs
•Storage pool "virtualization"
•Transparent to the users and applications
- Simple pointer (stub file) replaces data in original location
- Fast, direct restore from disk to client

•Migrations - Scheduled, automated, outside the backup window



- Avoid full-backups: typically it is the largest contributor to data growth in a data center
- Opt for progressive-incremental backup
  - ONLY new or changed files are backed up
  - Restores avoid multiplying the same file
  - Supports multiple versions of files
  - Accurate point-in-time restores
- Requires less storage space, less network bandwidth and less time
- Shorter backup windows, fast accurate restores

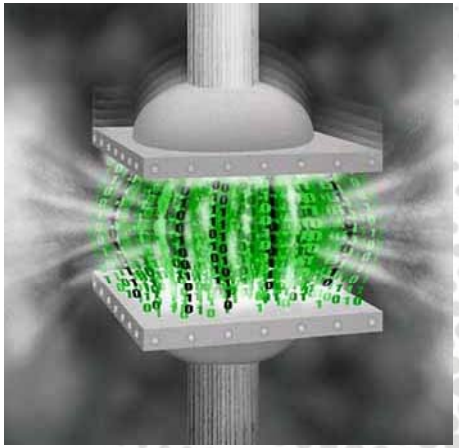
- **Tivoli Storage Manager** – 'progressive-incremental' and sub-file backup
- **Tivoli Storage Manager FastBack** – block level incremental
- **Tivoli Storage Manager FastBack** for Workstations
- **Tivoli Continuous Data Protection** for Files



- Selectable option
- Sub-file backup when only parts of a file change
  - Byte-Level: for smaller files
  - Block-Level: for larger files
  - File-Level: if more than 60% of the file has changed
- Tape Reclamation – increase tape utilization

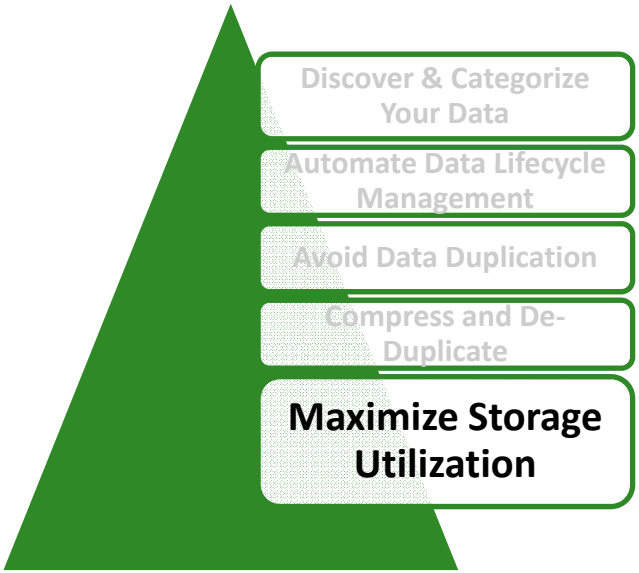
Tivoli Storage Manager v6.1 and **TSM FastBack v6.1** include target-side data deduplication, at *no extra charge*

- Improves recovery times and/or reduces capacity requirements
- Uses data from any source including: API, backup, HSM, archive
- Operates as a post-process; automatic space reclamation
- Builds on automatic data compression & progressive-incremental



New in **TSM v6.2** - client-side data deduplication

- Reduces network traffic by determining if a chunk has already been backed up (maybe from a different client system)

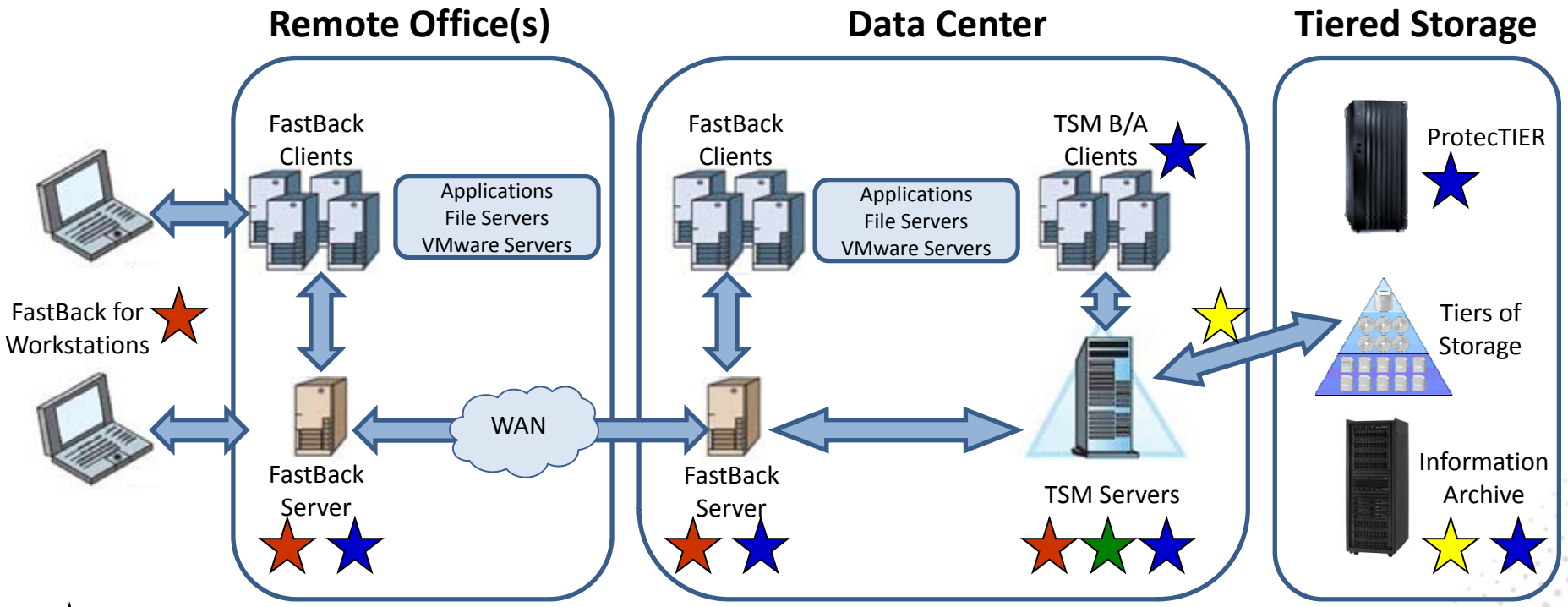


- Gain visibility and control of storage resources
- Enable end-to-end storage management
- Improve storage utilization, performance and service levels
- Reduce storage complexity
- Maximize utilization and simplify management

IBM Tivoli Storage Productivity Center

IBM System Storage SAN Volume Controller (SVC)

IBM's comprehensive data reduction portfolio



Incremental-only backup

Data compression and tape management

Data deduplication

Space management and archive

"IBM delivers data reduction in more places than any other vendor", analyst Mike Karp with Ptak, Noel & Associates, 02/10