

P2P Hierarchical Locking Storage Analysis

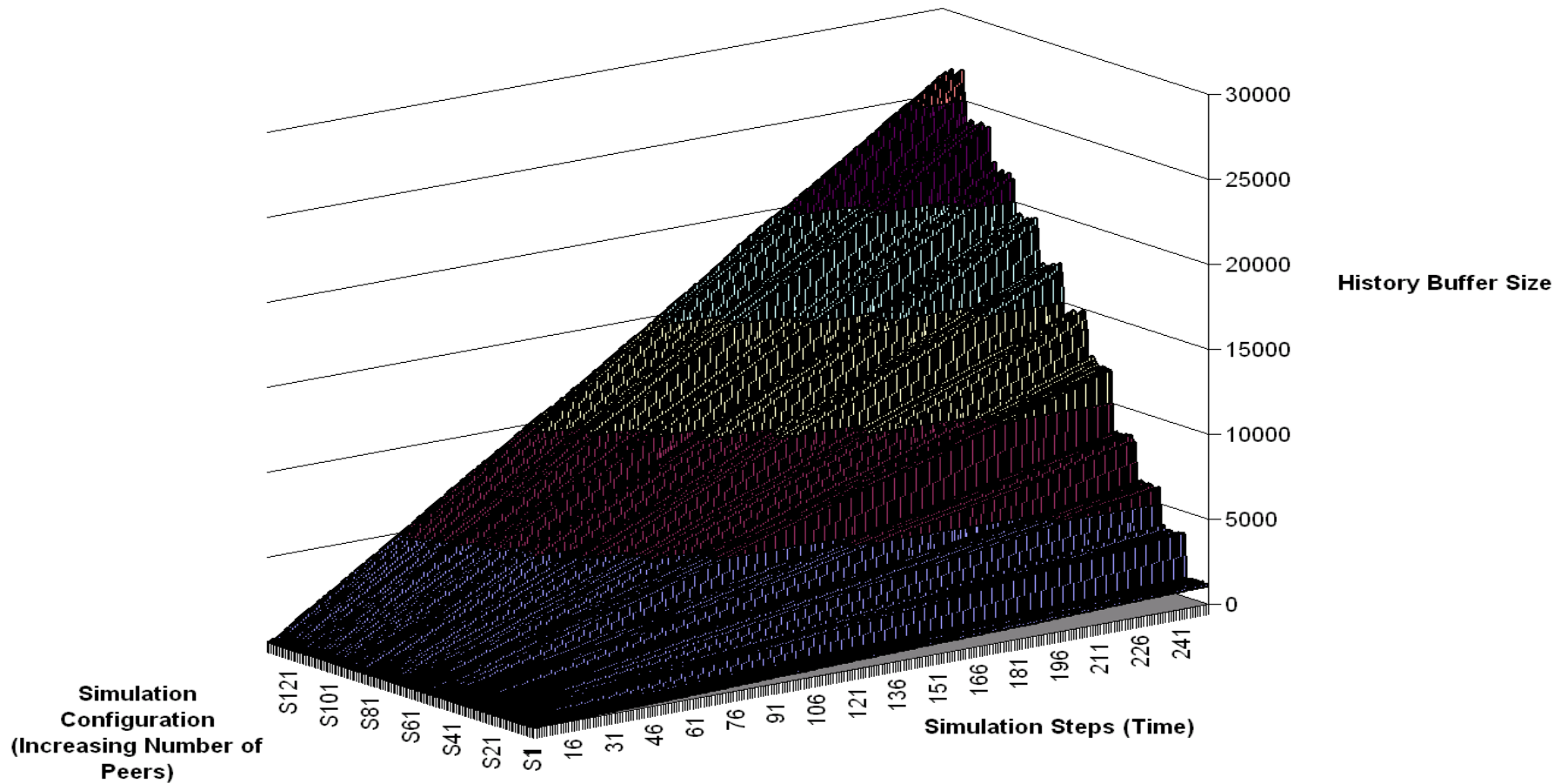
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June 29, 2007

Without Reduction

Storage Increases with Time and # Peers

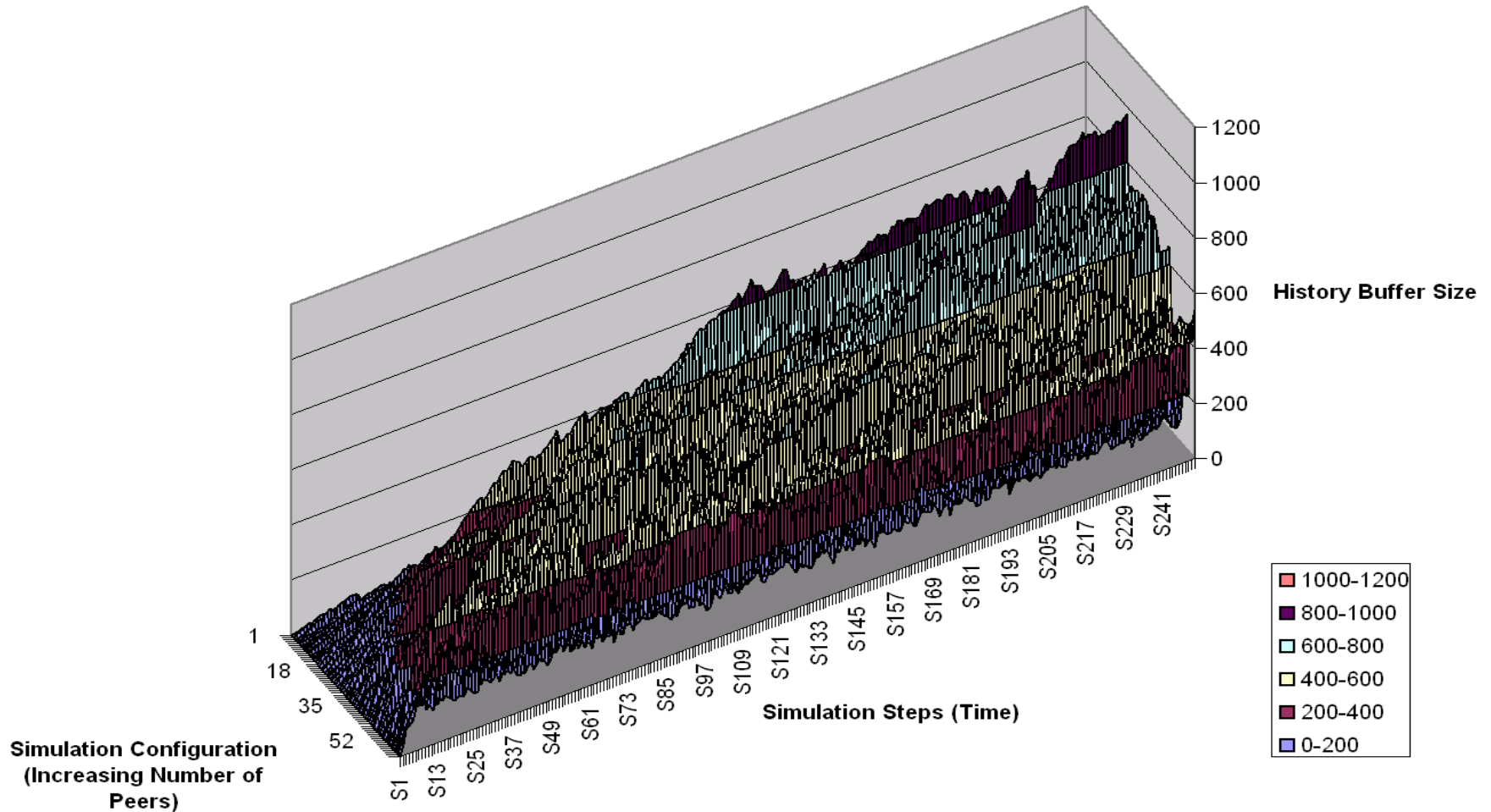
Storage Costs for P2P Hierarchical Reduction
NO REDUCTION



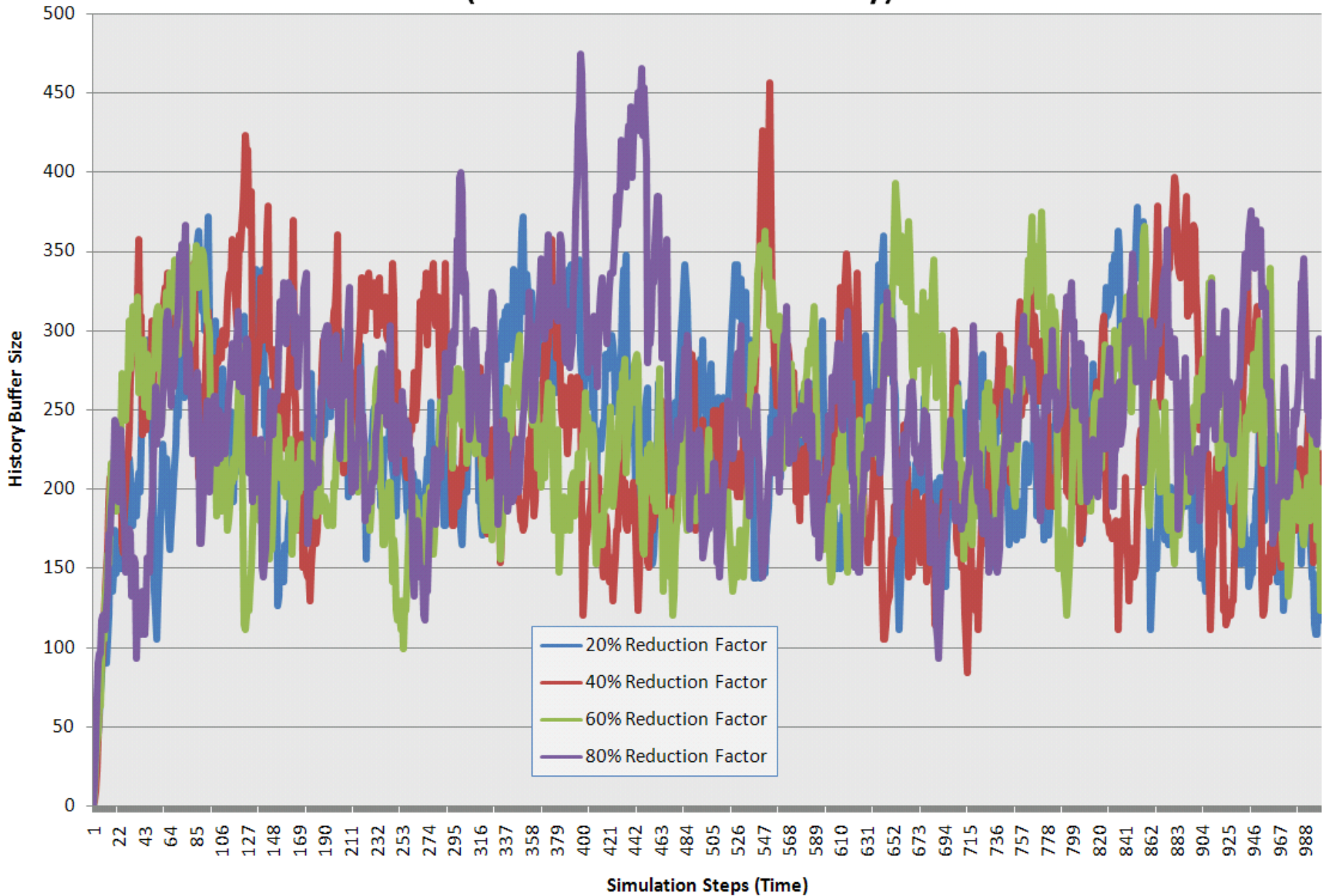
With Reduction

Storage Related to Rate of Reduction

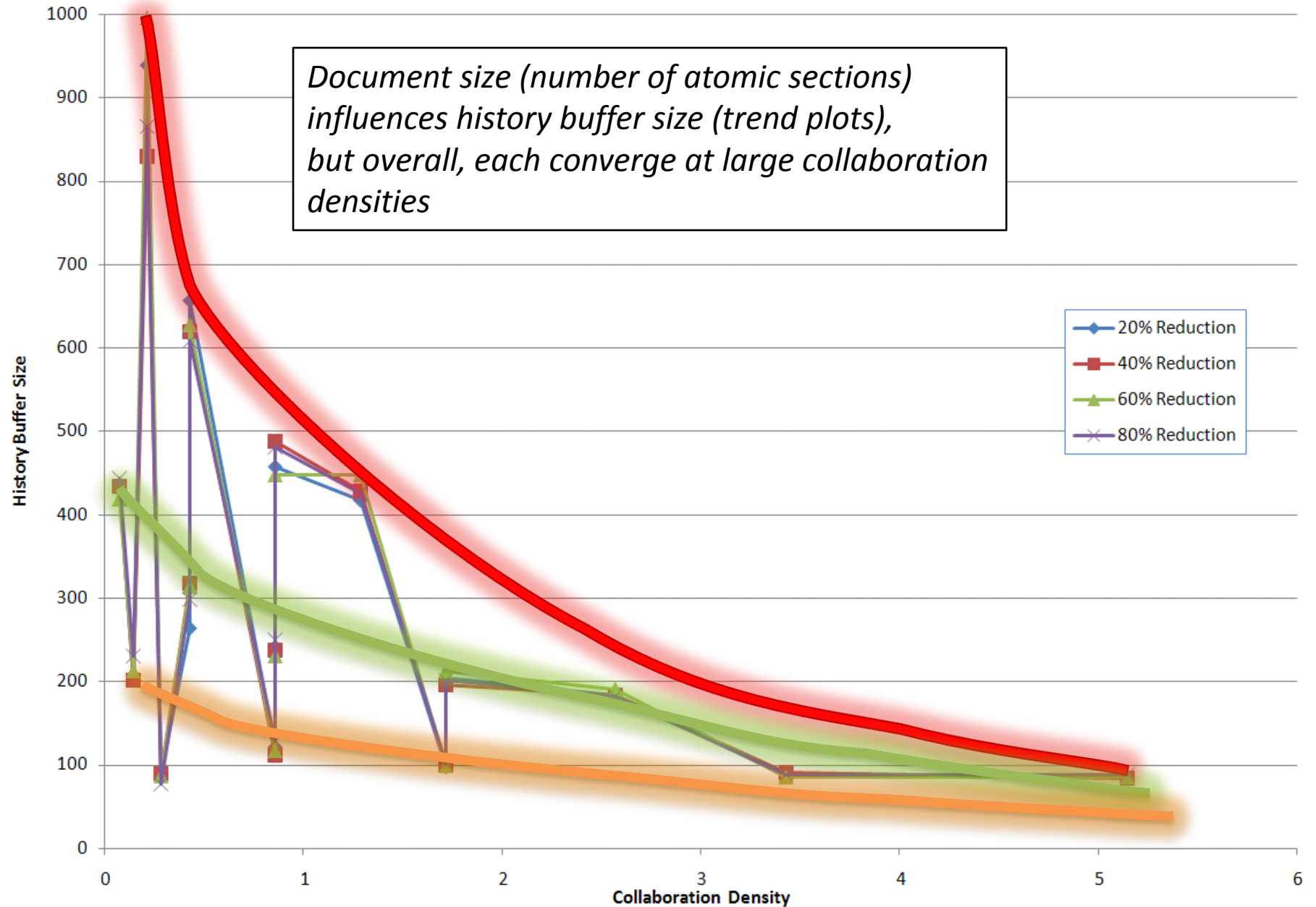
Storage Costs for P2P Hierarchical Reduction
WITH REDUCTION



Storage Cost for P2P Hierarchical Reduction (85% Collaboration Density)



Average Storage Cost for Hierarchical Reduction



Conclusions

- Reduction does significantly decrease history buffer space requirements
- Size of the history buffers decreases with increased collaboration densities
- Reduction factor does not significantly contribute to decreasing storage cost

Authoring Academic & Large-scale Documents in MS Word

Motivation

- LaTeX and Adobe are popular academic formats
- Authoring tools and features abound in MS Word
- But MS Word formatting is printer specific
 - I've been “burned” when submitting in DOC format!
- How can we use MS Word features but achieve “safe” formatting of PDF

MS Word isn't Evil

- It's a proprietary format in 2003
 - But DOCX (2007) is XML and open standard
- Many features to make life easier
 - Use EndNote (for bibliography)
 - Auto table (content, list of figures, etc.) creation
 - Added bibliographic management in 2007
 - Equation editor
 - Programable (VBA or .NET)
- Can export/save to PDF

First Things First

- Install a PDF “print” driver (via Adobe)
 - Print/”save as” PDF without changes (mostly)
- Use styles
 - Like CSS in HTML (format once, apply globally)
- Layout document, then fill in details/content
- Watch out for gotchas
 - “Roaming” figures/images

2003 vs. 2007

- Some nice formatting/style features added in 2007 (“SmartArt”)
- Bibliographic management added in 2007 (but you get this with EndNote and 2003)
- Print to PDF very slow in 2007 (1+ hour)
 - “Save as PDF” plug-in available in 2007
 - Not included by default!
- Excel 2007
 - Handles larger data sets in my experience (200+ columns, 64k+ rows)
 - Better string splitting functions (text parsing)

Working with Equations

Document2 - Microsoft Word

Equation Tools

Home Insert Page Layout References Mailings Review View Design

Equation Tools: Professional, Linear, Normal Text

Symbols: \pm , ∞ , $=$, \neq , \sim , \times , $+$, $!$, α , $<$, $>$, \gg , \leq , \geq , \mp , \Re , \approx , \equiv , ∇

Structures: $\frac{x}{y}$, e^x , $\sqrt[n]{x}$, \int_{-x}^x , $\sum_{i=0}^n$, $\{()\}$, $\sin\theta$, \ddot{a} , $\lim_{n \rightarrow \infty}$, \triangle , $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

Styles: Clear All, Normal, No Spacing, Heading 1, Heading 2, Title, Subtitle, Subtle Emphasis, Emphasis, Intense Emphasis, Strong, Quote, Intense Quote, Subtle Reference, Intense Reference, Book Title, List Paragraph

This is a sample function in Word 2007: $a^{b^{c^{d^e}}} + \left(x \cdot \left(\frac{y}{\{z/w\}}\right)\right)$. As you can see, it's automatically added into the text and the spacing adjusts around it. You can also make it disjoint from the text so that it stands alone and you can position it manually (with a non-relative anchor). Notice the auto-sizing of the brackets and the various exponential levels.

7: $a^{b^{c^{d^e}}} + \left(x \cdot \left(\frac{y}{\{z/w\}}\right)\right)$

Save as New Equation...

Professional

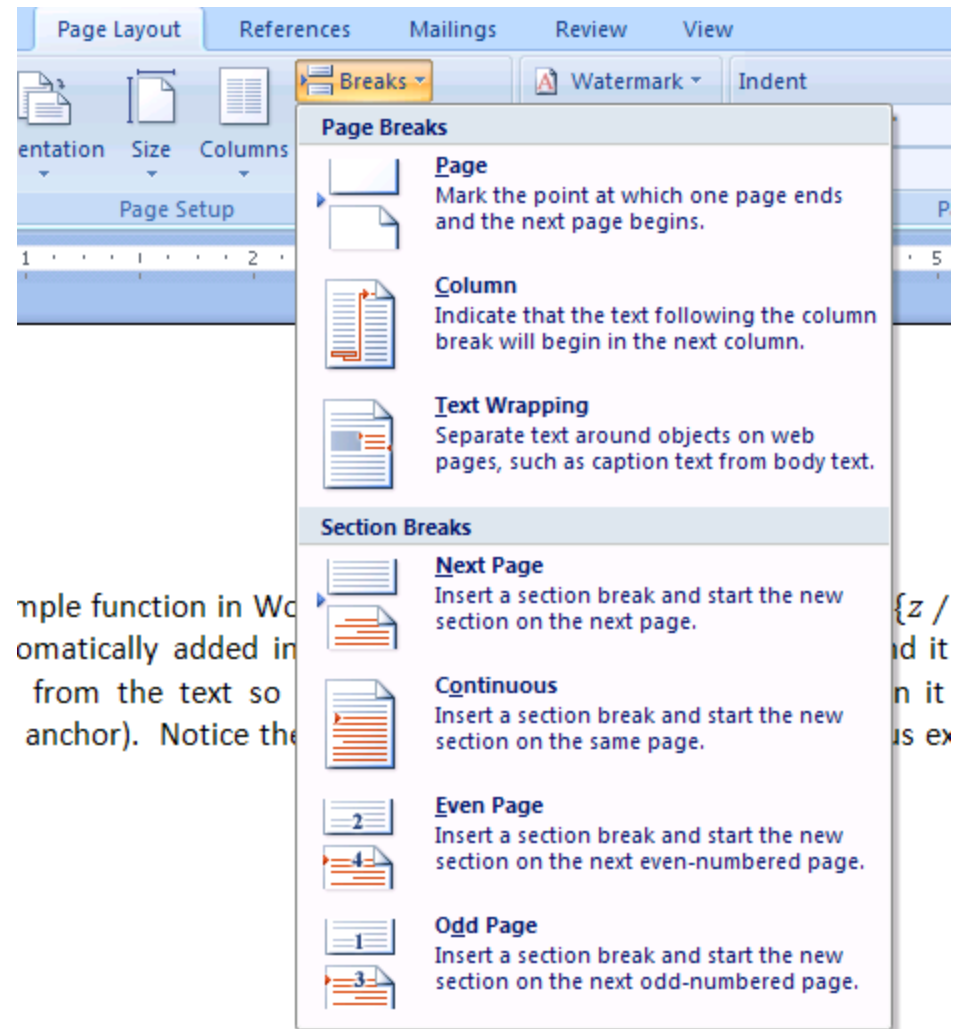
Linear

Change to Display

Justification

Sections (Headers/Footers)

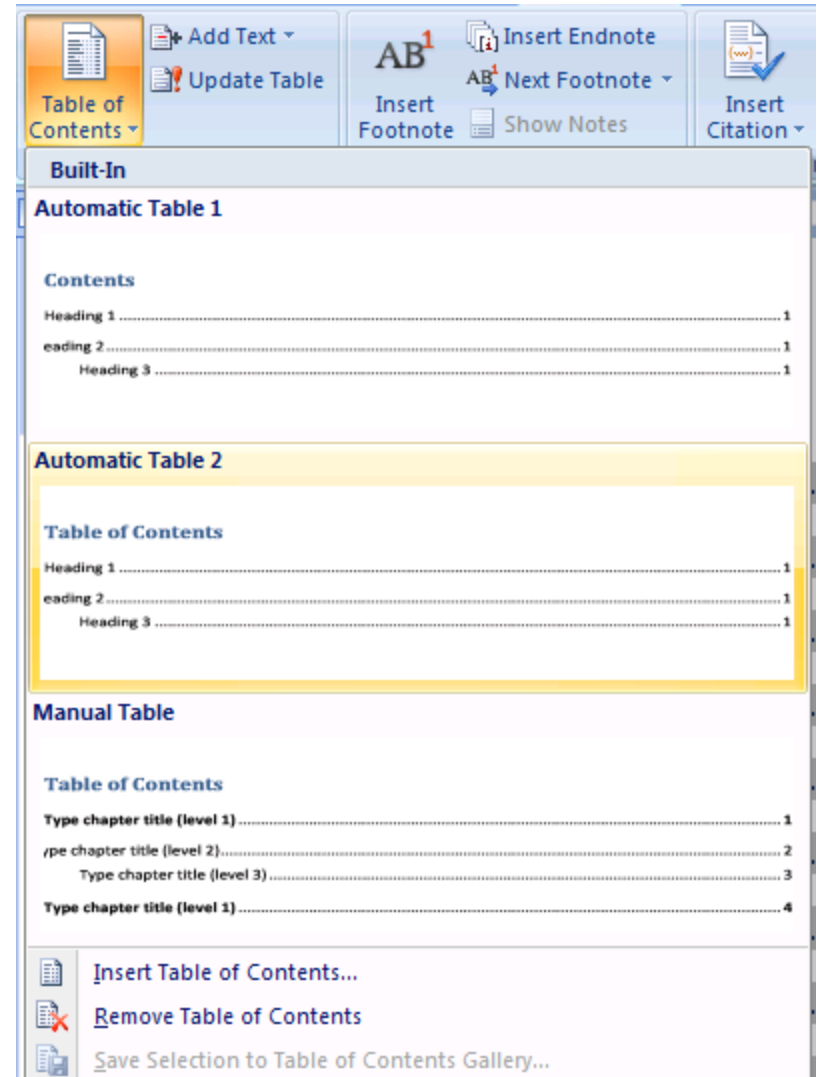
- Vital to establish different sections
- Each section can then have distinct headers/footers
 - Body pages numbered 1, 2, ...
 - Front matter numbered i, ii, ...



...ple function in Word automatically added in from the text so anchor). Notice the {z / and it n it is ex

Table of Contents and Figures

- Select what level to display (based upon styles – i.e. h1, h2, etc.)
- Format based upon styles
- Auto-updates if you change the text
- Automatically displays page numbers



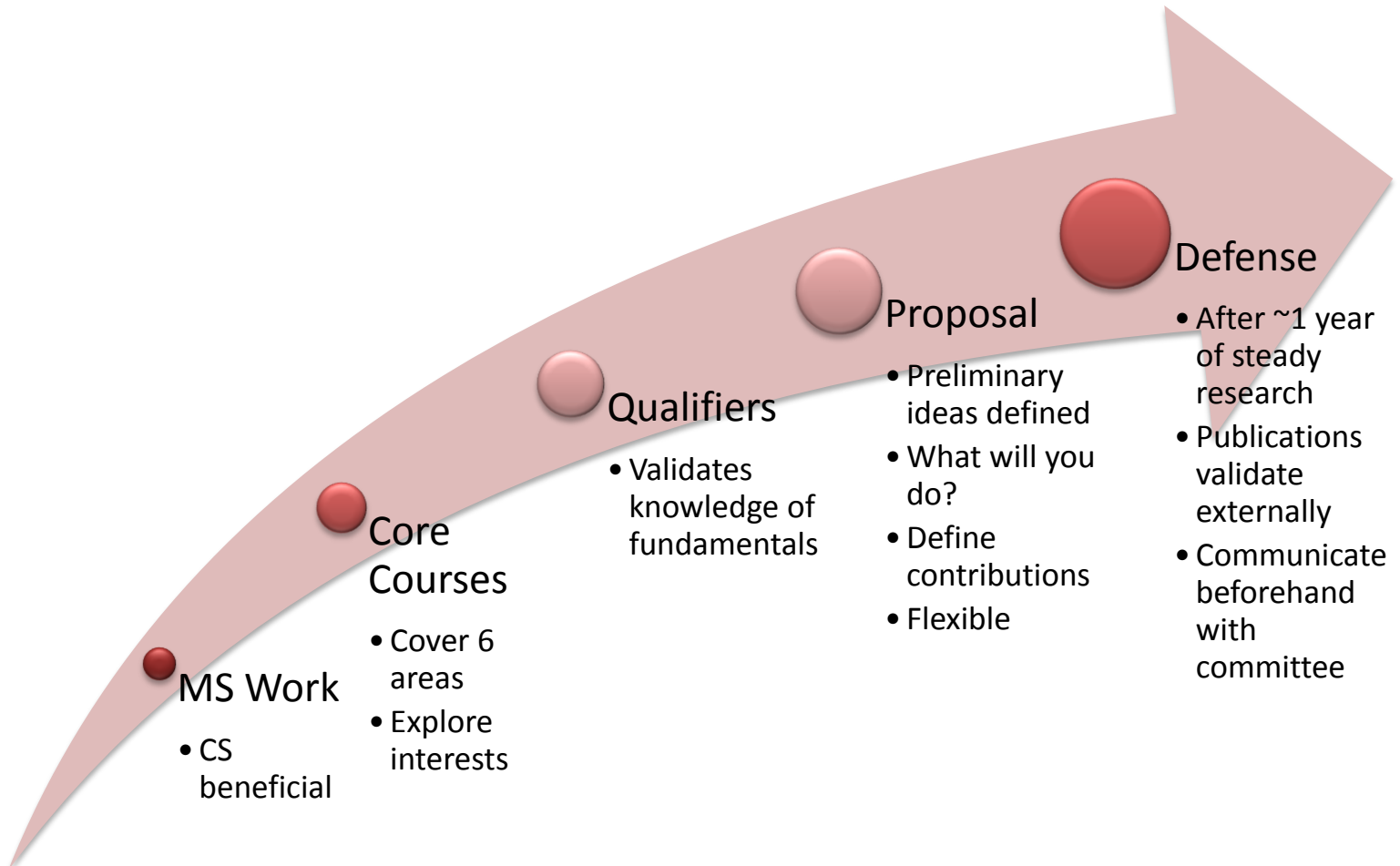
Bibliographic Management

- Add/manage sources
- Reference them via placeholders
- Select how to display sources (APA, MLA, etc.)

The screenshot shows a 'Create Source' dialog box with the following elements:

- Title bar:** 'Create Source' with help and close icons.
- Type of Source:** A dropdown menu currently showing 'Conference Proceedings'. The menu is open, listing options: Book, Book Section, Journal Article, Article in a Periodical, Conference Proceedings (highlighted), and Report.
- Bibliography Fields for APA:** A section containing several input fields:
 - Author: []
 - Title: []
 - Pages: []
 - Year: []
 - Conference Publication Name: []
 - City: []
 - Publisher: []
- Show All Bibliography Fields:** An unchecked checkbox.
- Tag name:** An input field containing 'Placeholder1'.
- Buttons:** 'Edit' (next to Author), 'OK', and 'Cancel'.

SmartArt



MS Work

- CS beneficial

Core Courses

- Cover 6 areas
- Explore interests

Qualifiers

- Validates knowledge of fundamentals

Proposal

- Preliminary ideas defined
- What will you do?
- Define contributions
- Flexible

Defense

- After ~1 year of steady research
- Publications validate externally
- Communicate beforehand with committee