



The Matrix Transformed: Achieving Better Focus and Insight in Learning Management System Selection

Laura R. Winer

Adam B.A. Finkelstein

Michael D. Deutsch

Anthony C. Masi

Outline

- Why should you stay for this presentation?
- Our LMS selection process: Plan A
- “Hmmm, something’s wrong.”
- Moving to Plan B
- How can *you* use this?

Why should you stay?

We will demonstrate real changes that can make a difference in your LMS selection process.

You will gain transferable lessons to other selection processes.

Canadian-isms

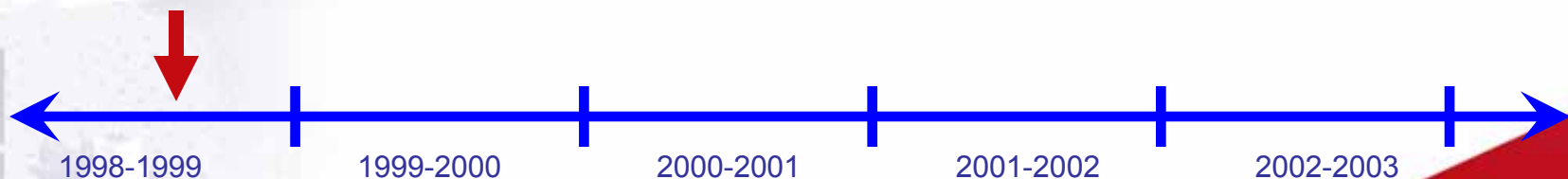
- Definition of terms
 - color → colour
 - behavior → behaviour
 - Huh? → Eh?
 - Texas → Alberta
 - *US News* rankings → *Macleans* rankings
 - School/College → Faculty
 - Spring Term → Winter Term

McGill University

- Chartered in 1821 - Montréal, Quebec
- Tier 1 research institution
- 21 Faculties / Schools
- Public university
- Full time students (not for calculation of site licenses ☺)
 - 19,500 undergraduate and 6,500 graduate
- Academic staff
 - 1,400 tenure / tenure track faculty and 4,000 research, part-time, visiting staff

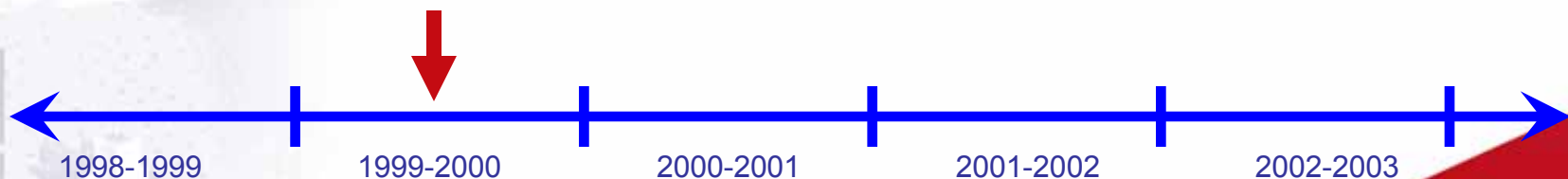
History of LMS at McGill

- WebCT 1.3, Lotus Learning Space & individual course websites
 - Fully manual (course creation, users, etc.)
 - No terms, therefore no history
 - Small number of courses
 - Little support available



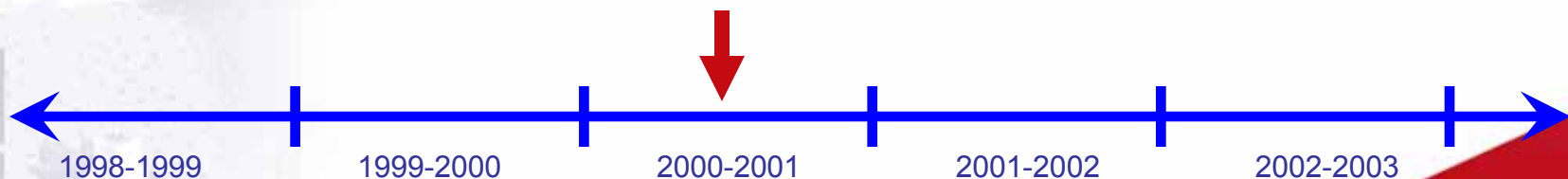
History of LMS at McGill

- New unit for central support for WebCT
 - Accounted for all administration, technical and pedagogical help for faculty
 - Beginning of support for only WebCT



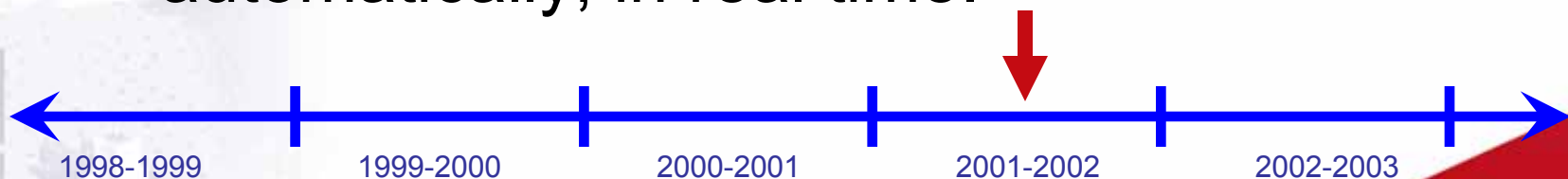
History of LMS at McGill

- WebCT v3.1
 - Manual course creation
 - No time dimension
 - First batch SIS integration
 - Class list manually synched by instructor



History of LMS at McGill

- New vision for online learning
 - Every course would get a WebCT area by default.
 - WebCT participation should require as little user intervention as possible.
 - All enrollments would be done automatically, in real time.



History of LMS at McGill

- *Event:* massive integration failure
 - Technical
 - Organizational
- *Result:*
 - LMS recognized as an Enterprise system
 - Internal reorganization

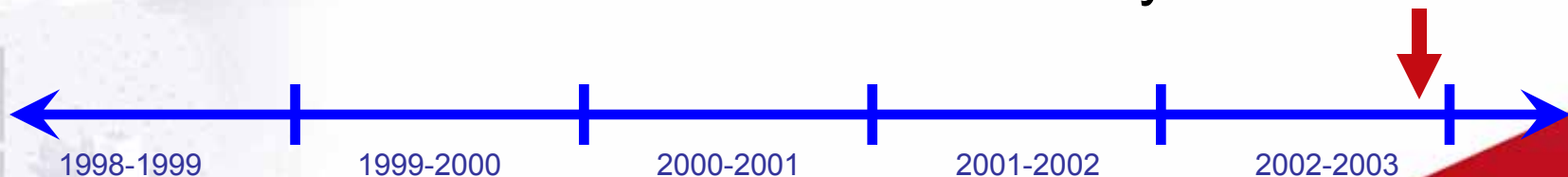


LMS an enterprise system

- Not just administrative system for record keeping
- WebCT traffic dwarfed all other systems
- Teaching faculty and student body dependent on WebCT
 - Became part of the daily learning process
- 20,000 students with a problem is not a pretty sight

LMS an enterprise system

- The new vision informed all decisions
- We outgrew our LMS
 - 14,000,000+ files, 24hr backup, ~12 days restore
 - 45% of courses use WebCT
 - 75% of students have at least 1 course in WebCT
 - Usage almost doubling each year
 - Need for more robust and scalable system



The search begins...

- Internal research: Fall 2002
- Paid attention to community and peers
 - CREPUQ Nov. 2002
 - “SARS meeting” Apr. 2003

Result: 2 players left standing

Plan A:

Classic features matrix

- Key Rules
 - Only compare released versions
 - Piggyback off peers



providing decision-making tools for the E-D-U community.
A project of *wcet*

Select features below that are important to your decision:

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Learner Tools

> Communication Tools

[Discussion Forums](#)

[File Exchange](#)

[Internal Email](#)

[Online Journal/Notes](#)

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> Productivity Tools

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[Orientation/Help](#)

[Searching Within Course](#)

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> Student Involvement Tools

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Support Tools

> Administration Tools

[Authentication](#)

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[Automated Testing and Scoring](#)

[Course Management](#)

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[Online Grading Tools](#)

[Student Tracking](#)

> Curriculum Design

[Accessibility Compliance](#)

[Content Sharing/Reuse](#)

[Course Templates](#)

[Curriculum Management](#)

[Customized Look and Feel](#)

[Instructional Design Tools](#)

[Instructional Standards Compliance](#)

Technical Specifications

> Hardware/Software

[Client Browser Required](#)

[Database Requirements](#)

[Server Software](#)

[UNIX Server](#)

[Windows Server](#)

> Pricing/Licensing

[Company Profile](#)

[Costs](#)

[Open Source](#)

[Optional Extras](#)

[Software Version](#)

-



Why a matrix?

- Appears objective and “rigorous”
- Easy to compare results

Learner Tools

> Communication Tools

<u>Discussion Forums</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>File Exchange</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>Internal Email</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>Online Journal/Notes</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>Real-time Chat</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>Video Services</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
<u>Whiteboard</u>	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

“Hmmm, something’s wrong.”

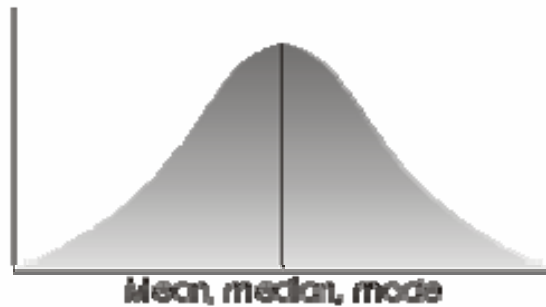
- Shortcomings appear
- We sensed a disconnect

Three key problem areas

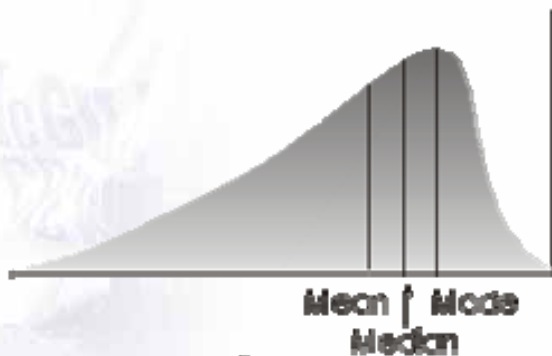
1. Arithmetic
2. Qualitative differences
3. Meaningful conclusions

Shortcomings:

1. Arithmetic



A



B



C

Which one is better?

<http://www.stats-consult.com/tutorial-02/figure2-5.gif>

Shortcomings:

1. Arithmetic

- Matrix arithmetic is inadequate
- Measurement of central tendency, not shape, distribution, skew
- Outliers are important
- Deal breakers are buried

Shortcomings:

2. Qualitative differences

- When differences in quantitative value mask differences in qualitative kind
- Are apples *better* than oranges?
- Some features implemented are very different, not strictly *better*

Shortcomings:

3. Meaningful conclusions

- Statistical vs. meaningful
 - Was a difference of “3 points” really an indication of which system we would enjoy more?
 - Was that kind of precision really meaningful?
- 38 vs 42?

Could we fix the matrix?

The obvious adjustments ...

1. Magnify the scale
2. Split the criteria
3. Weight the criteria

Fix the matrix:

1. Magnify the scale

- 0-10 → 0-100
- Why not?
 - Do decimal point differences give you a level of comfort in decision-making?
 - Decimal place difference are not necessarily more meaningful
 - Missing the point between precision and meaning

Fix the matrix:

2. Split the criteria

- Discussion tool → posting, reply, groups, threads, etc.
- Why not?
 - Should you enforce a uniform “depth” across all criteria?
 - Not every area is rich enough to support the same depth
 - Whole more than sum of its parts

Fix the matrix:

3. Weight the criteria

- Discussion = $10n$
- Quizzes = $5n$
- Why not?
 - Are discussions *more important* than quizzes?
 - Instructional strategies are largely value neutral
 - Not simply one pattern of use

What now?

- We were paralyzed!
- How can we choose *the* right system?

Our Epiphany: “McGill’s Law”

Anything that we chose would be better than what we have now.

Anything that we chose would give us massive headaches.

Moving to Plan B

- Develop a framework without these inherent structural weaknesses
- Data driven decisions
- Respect differences in approach and “cultural” preferences

McGill's Plan B

- Establish the deal breakers
- Transform the matrix
 1. Use cases vs. feature list
 2. New rating scale

Deal breakers

- Would pre-empt decision process
- Truly mission critical areas only
- Our deal breakers **were**:
 - Student Information System integration:
 - Robust, proven, IMS-compliant (and Banner-specific) data connection
 - Operate in real time (no change in service)
 - Confidence in the partnership at all levels

Deal breakers

- Our deal breakers ***were not***:
 - Competence – our expertise
 - Comfort – dealing with the familiar
- Our technical team recognizes the primacy of the University mission
 - It trumps comfort and competence
 - They are the enablers

Transform the matrix: Use cases

- Scenarios of what users want to **do**
 - Empirically derived from our LMS analysis
 - Theoretically driven from our pedagogical knowledge and vision
- Best practices collected from vendors and existing clients

Transform the matrix: Use cases

- Not realistic for everything
 - Pick key areas
- Three types
 - Technical
 - Pedagogical
 - Business

Use cases - technical

Matrix criterion	Use Cases
Section archive/restore tool	Migrate course content from term to term
	Share course materials with a colleague
	Manage course archives

- The Matrix approach asks, “Does the function exist, and how does it rate?”
- The Use Case approach asks, “What will be the quality of my experience?”

Use cases - pedagogical

Matrix criterion	Use Cases
Group management	Conduct discussions with different groups of students
	Create group assignments
	Evaluate group work

- The Matrix approach asks, “Does the function exist, and how does it rate?”
- The Use Case approach asks, “What will be the quality of my experience?”

Use cases - business

Matrix criterion	Use Cases
Support	Emergency response scenario
	Routine question process
	Sharing with user community

- The Matrix approach asks, “Does the function exist, and how does it rate?”
- The Use Case approach asks, “What will be the quality of my experience?”

Transform the matrix: New rating scale

- 1-10 → Unacceptable, acceptable, recommended
- Can you live with it or not?
- Accept variation in ratings

Sub-categories: Pedagogical

- Content
- Communications
- Assessment
- Administration
- Functionality

Sub-categories: Technical

- Site Administration
- Product Architecture
- System and Hardware
- Development approach

Sub-categories: Business

- Upgrades
- Support
- Cost
- Financial Stability & References
- Business practices
- User Community

How can *you* use this?

- The classic matrix is flawed
- “Fixing” the matrix doesn’t solve the problem
 - Magnify the scale
 - Split the criteria
 - Weight the criteria

How can *you* use this?

- Start with Plan B
 - Develop your deal breakers
 - Develop your use cases
 - Select your rating scale and categories

How can *you* use this?

- Remember:
 - Matrix giving static image of a dynamic system
 - Beware the illusion of precision
- You are selecting a process, not a product

So, how did it go?

- Currently in phase 2 of our implementation

While we can't know if we made the “right” decision, we feel that we made the most “defensible” decision.

Questions?

Contact info:

Laura R. Winer

laura.winer@mcgill.ca

Adam B.A. Finkelstein

adam.finkelstein@mcgill.ca

Special thanks

Michael D. Deutsch

Anthony C. Masi

Please fill out your evaluations!