HCI Paper — Consolidated (1996–2000 Constraints, Market■Agnostic)

Sections 1–3 with KLM Appendix (A), Methods & Metrics (B), and templates (C–F).

Section 1 — Internationalization Posture (1996–2000, Market■Agnostic)

1(a) Internationalization posture (no specific locale)

• Baseline: Ship English UI on Windows 95/98/NT4/2000. Treat other locales as optional plug■ins.

• Text & resources: Externalize all strings to Win32 resource DLLs; avoid text baked into bitmaps. Enforce string■length budgets for 800×600 CRTs.

• Encoding strategy: On Win9x use ANSI code■pages; on NT4/2000 prefer Unicode (UTF■16) internally; provide ANSI shims for Win9x.

• Locale surfaces: Drive date/number/time formats via LCID; respect OS short■date and 24h/12h settings; avoid culture■bound abbreviations.

• Keyboard/shortcuts: Avoid Alt+letter collisions; validate accelerators on US layout and allow remapping.

• QA matrix: Smoke on Win98/NT4; regression on Win2000. Validate Common Controls v5/v6, font fallback, truncation at 800×600.

1(b) Interaction style of the dialog

• Retain direct manipulation + form dialogs (tabs/panes) with OK/Apply/Cancel semantics and standard Win95/98 widgets.

• Rationale: Period familiarity beats novelty; standard controls lower cognitive load and reduce documentation/training overhead.

1(c) What stays/changes without a target locale

• Stays: Layout, control grouping, tab order, and Windows■terminology aligned to platform guidelines of the era.

• Changes: Strip locale■specific guidance; keep i18n hooks (resource DLLs, LCID formatting, accelerator remapping) for future markets.

Section 2 — Usability Evaluation & Choice Architecture

2(a) Error Counts vs. Learning Curve — Decision Framework

Operating Principle: Optimize for rate of improvement over time, not zero errors on first touch. In a Win95/98/NT4/2000 context, novice users expect minor missteps; what matters is how quickly errors decay between sessions.

KPIs to instrument:

• T1 vs T3: $\Delta T = T1 - T3$ (higher is better).

• Error Decay Index: e1/e3 (target ≤ 0.4).

• Assist Reliance trend: CHM opens, tooltip dwell $\geq 1.5s$.

• Retention: task success without prompts after 72 hours.

Policy: Ship the design with faster error decay and lower assist reliance, even if initial error counts are slightly higher.

2(b) GOMS/KLM — Period■Correct Methods and Assumptions

Use GOMS for qualitative method selection and KLM for time estimates. Late■90s operators: K=0.20s, P=1.10s, B=0.10s, R=0.10s, H=0.40s, M=1.35s.

• If already in Explorer, context■menu method dominates due to fewer homing/mode switches.

• Menu■bar method fits keyboard■centric NT4/2000 workflows with consistent Alt■accelerators.

• Avoid novel widgets without validated KLM parameters.

2(c) A/B Time Series — When to Choose the Slower Option

Default to the faster design across sessions; override only when risk profile, discoverability, or batch error cost justifies the slower alternative. Document explicit deltas (e.g., +2.3s median per task; –48% severe errors; +21% first■session success).

Section 3 — Batch File Converter UX (Single■Window Win32)

3(b) Interaction Strategy (Keep It Simple)

• Primary surface: single■window GUI; users build a queue, choose format/output, execute.

• Core UI: multi■select File Open → listbox queue columns (Name, Size, Source, Status); Toolbar (Add/Remove/Move/Output/Convert/Stop); Menus (Alt+F/E/V; F1).

• Status: progress + error count; toggle log panel via View.

• Power paths: drag■and■drop; F2 rename; F5 convert; Esc cancel; right■click on queue items.

• De■prioritize: voice input circa 1999; modal wizards for routine runs.

3(c) User Variability — Practical Accommodations

• Accessibility: full keyboard navigation; Tab order; high■contrast theme respect; no text baked into bitmaps.

• Motor precision: larger targets (≥ 24 px @ 96 DPI) and sticky selections for low■DPI mice.

• Experience spectrum: tooltips and CHM topics; plain■language errors; safe defaults and reversibility.

Appendix A — KLM Time Estimate (Folder Creation, Windows 98 Explorer)

Method A (Context menu). Operators: K=0.20s, P=1.10s, B=0.10s, R=0.10s, H=0.40s, M=1.35s.

Operator	Count	Unit Time (s)	Subtotal (s)
M	1	1.35	1.35
P	1	1.10	1.10
B (select)	1	0.10	0.10
R (open context)	1	0.10	0.10
B (New)	1	0.10	0.10
B (Folder)	1	0.10	0.10
K (type name, ~8 chars)	8	0.20	1.60
K (Enter)	1	0.20	0.20
TOTAL			4.65

Notes: Times reflect late■1990s defaults; actuals vary by device and user motor precision.

Appendix B — Methods & Metrics (One■Page Playbook)

Scope:

• Late■90s Windows desktop usability for novice–intermediate users.

Study Design:

• 8–12 participants; two sessions (Day 0, Day 3).

• Environment: 800×600, 96 DPI, Win98/NT4; CHM installed.

• Tasks: create/rename/move; batch convert queue; configure dialog settings.

Instrumentation:

• Timing via lab logs; optional capture; timestamp key events.

• Event taxonomy: benign vs severe errors; assist events (CHM open, tooltip dwell ≥ 1.5s).

• Metrics: ΔT (T1–T3), Error Decay (e1/e3), Assist trend, 72h retention.

Decision Rules:

• Favor faster learning curves and fewer severe errors over marginal first■use speed.

• Redesign triggers: retention < 80% or severe errors > 5% by session 2.

• Document numeric deltas in release notes.

Appendix C — A/B Results Template (Time Series + Error Decay)

Task	Design	T1 (s)	T3 (s)	ΔT	Errors S1	Errors S2	Error Decay	Assist Δ

Decision Note: Ship the variant with faster ΔT, lower severe errors, and improved retention.

Appendix D — Risk Register (Severe Error Classes)

Risk ID	Error Definition (Severe)	Trigger/Context	Mitigation	Residual Risk	Owner / Status
R-01					
R-02					
R-03					
R-04					
R-05					
R-06					
R-07					
R-08					

Appendix E — Study Notes (Methods & Metrics Capture)

Participant	Design	Task	Events	Observations	Follow■ups	Timestamp

Appendix F — Win9x/NT4 Test Matrix Reference

Use the companion spreadsheet “HCI_Test_Matrix_Win9x_NT4.xlsx” to drive coverage and enter results for:

• Font fallback correctness

• Truncation at 800×600

• Accelerators verified

• CHM accessibility