WHAT WILL MAKE IMPLEMENTATIONS EASY TO TAILOR IS THAT GOOD TOOLS EXIST FOR XML. WHAT WILL MAKE THEM SCALABLE IS THAT TDO STRUCTURE IS RECURSIVE AND USES LINKS EXTENSIVELY.

rarely, and will be discernible when it happens.
- Correct information delivery will be insensitive to Internet security risks. Objects might disappear, but if a TDO is delivered, its integrity can be validated.
- Identifier creation servers will not be needed. Specialized name-to-location resolvers might not be needed, because popular Web crawlers could readily include the function. Bit-string replication for robust TDO storage can include completely automatic management of Internet directories.
- Collection management can be simplified by exploiting TDO link reliability. If metadata is sufficiently standardized, users will be able to use automatic tools to create personal digital library catalogs that suit their special needs and preferences.
- TDO software can be brought into service without disrupting installed digital libraries. Preservation objects can be stored, cataloged, and served by any of several extant content manager offerings.

What will make implementations easy to tailor is that good tools exist for XML. What will make them scalable is that TDO structure is recursive and uses links extensively.

CONCLUSION

Most preservation literature emphasizes the perspectives of archiving institutions. This article and supporting TDO reports focus on end users' needs because these have precedence over repository needs. Principles for a TDO design have been articulated here to address every technical problem and requirement identified in the literature. The central elements are an encapsulation scheme for digital preservation objects and encoding using extended Turing-complete virtual machines. Correct TDO implementations will allow preservation of any type of digital information and will be as efficient as any competing solution.

Critical examination of this work by readers is encouraged and public discussion is called for because "getting it right" is too important for anything short of complete transparency. **C**

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