# becoming artifacts
## Medieval seals, Passports and the Future of Digital Identity

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## Dissertation (Preview)
Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Information Science and Technology from the Graduate School of Syracuse University

## April 2012
SYRACUSE UNIVERSITY: SYRACUSE, NEW YORK

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## Abstract

What does a digital identity token have to do with medieval seals? Is the history of passports of any use for enabling the discovery of Internet users' identity when crossing virtual domain boundaries during their digital browsing and transactions? The agility of the Internet architecture and its simplicity of use have been the engines of its growth and success with the users worldwide. As it turns out, there lies also its crux. In effect, Internet industry participants have argued that the critical problem business is faced with on the Internet is the absence of an identity layer from the core protocols of its logical infrastructure. As a result, the cyberspace parallels a global "territory" without any identification mechanism that is reliable, consistent and interoperable across domains. This dissertation is an investigation of the steps being taken by Internet's stakeholders in order to resolve its identity problems, through the lenses of historical instances where similar challenges were tackled by social actors.

Social science research addressing the Internet identity issues is barely nascent. Research on identification systems in general is either characterized by a paucity of historical perspective, or scantily references digital technology and online identification processes. This research is designed to bridge that gap. The general question at its core is: *How do social actors and processes enable the emergence and effective use of authoritative identity credentials for the public?* This work is guided by that line of inquiry through three broad historical case studies: first, the medieval experience with seals used as identity tokens in the signing of deeds that resulted in transfers of rights, particularly estate rights; second, comes the modern state with its claim to the right to know all individuals on its territory through credentials such as the passport

or the national identity card; and finally, viewed from the United States, the case of ongoing efforts to build a stable and robust digital identity infrastructure.

In the process, we understand the relationship of seals to the doctrines of the Trinity and the Eucharist developed by schoolmen within the medieval Church, and we understand how crucial it was for the modern state to coin the legal category of nationality – which emerged as late as in the 19th century – for its identification project. Following an inductive and process-tracing approach to historical case study, this investigation incrementally builds an analytical framework gathering a number of factors that demonstrate an explanatory quality or potential as well as the main analytical insights gained during this inquiry. An ordering of those factors is proposed as a way to capture the causal mechanisms at work across these large sequences and structures. In the analysis of the third case, the making of digital identity is assessed against that backdrop. While the findings of this case appear to consolidate the framework already outlined, new trajectories of implementation-adoption also emerge. Drawing on the rich history of large-scale identification systems, this work generates a number of insights that qualify our expectations about identity technology design and policymaking. It also proposes possible scenarios and pathways to the realization of authoritative digital identity, some plausible and some other less so, which stakeholders may consider. But this is just the beginning of yet another story of identity.

To my late mother


Theodora K. E. T.
  (1943 – 2011)



In memoriam


*our feast may have been deferred*
*our chant turned into a clamor of dust*
*still reverberate across all verbs of my being*
*the humming of my inaugural cell and*
*the streaming of our primitive waters*
*until times reconfigure our cypher*


*here too we shall abide*

M. C.

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## Acknowledgements

I would like first to thank people at the Internet Identity Workshop and in the Digital Identity community in general for being the source of the motivation for this research. More particularly, I would like to recognize individuals who have helped form my understanding of what digital identity technology entails or who have informed this research effort in one way or the other. They include Eve Maler, Drummond Reed, Stefan Brands, Dick Hardt, Scott David, Phil Windley, Paul Trevithick, Johannes Ernst, Trent Adams, Kim Cameron, Marc Davis, Tony Rutkowski, Mary Ruddy, and Glenn Benson.

I also want to thank my committee members for their time, advice and fellowship during this long and winding process, which is full of doubts but also filled with intellectual epiphanies. I am thankful for having dear friends such as Jeff and Peg Owens as well as Pat and Ben Addom around at troubling times. Finally, I want to express my heartfelt gratitude to Ellen Hobbs, Gina Lee-Glauser and Mark Glauser for their invaluable support at the most critical of those moments throughout that journey.

To all of you, many thanks!

## Overture

*Ithaca, at last! ...*

*After long years of sailing, Odysseus (also known as Ulysses) can now see his native shore emerge from the horizon. He returns home after a score of years, the first decade fighting the Trojan War followed by another of tribulations at high seas on his way back to Ithaca. Now he has to confront Penelope's wooers and suitors rivaling to replace him as her husband. In the face of their constant pressure, she has so far devised efforts and tricks to put off marriage. And now after such a long leave of absence and all the tribulations, there he is, Odysseus! Or is he? Under the guise of a beggar draped in a halo of mist, by the favor of the goddess Athena, how to tell who that visitor is?*

*Repeatedly in his encounters over the course of his epic voyage, was that man of many ways asked to reveal his identity, to no avail. Now that at long last he sets foot again in homeland, his identity once without question across the realm now is yet to be ascertained ... by Penelope of all people! In order to regain his place by her side, not only did he have to decimate the ranks of the young and arrogant princes vying for her hand, but he now have to face her unwavering incredulity.*

*When the hero of countless feats reached for the prize of the bride, he is yet to face the ultimate test. Penelope figures an impromptu and less spectacular probe for the man she still doubts to be Odysseus. Only the two spouses knew that one leg of their bridal bed was built – by Odysseus himself – out of the trunk of an actual tree. So when Penelope ostensibly pretends to order the bed displaced, the returning hero cannot help but be surprised by such request given the impossibility of the task, unless the leg of the bed was*

*cut off from the tree. For Penelope, there eventually lies the unbreakable proof of the*

*identity of the presumed stranger: she can finally recognize and welcome back her long*

*awaited mate.*

*Odysseus, at long last!* [1]

There is no better place (*topos*) for our departure in this endeavor than the return of Odysseus. Told very long ago, this story provides us with a narrative that the so-called Western world has come to regard as a matrix for many of its self-defining narratives – a tale of origins as well as a tale of identity. Only once during his epic journey did Odysseus make an attempt to tell who he was: to the Cyclops who asked 'who are you?' he cryptically dropped: My name is Nobody[2]. A person who is Nobody – for somebody. That's where the identity quest begins. Hopefully, it will lead to that person being something more than Nobody, being Someone – for somebody.

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[1] From *Odyssey* by Homer, I first heard the story of Penelope and the bed test by the late Hellenist Jean-Pierre Vernant when he came to give a talk at my Philosophy department at the University of Lille in the early 1990s. About Odysseus's identity, see Vernant and Ker (1999) and Dimock (1956). Another variation on the theme of identity and homecoming after a long period of absence is Martin Guerre's story: see Davis (1993).

[2] While 'nobody' is unambiguously a negative in English, its equivalent in many Latin-born languages is more neutral (and can be used negatively as well as positively). *Person* in French for example translates to English both as 'person' and as 'nobody' (i.e. 'not any one person'), depending on the syntactic context. The Greek word translated in Latin by *persona* originally means mask as worn by actors representing their character in the Greek tragedy. An important conceptual development occurred in the post-millennium Middle Ages where the term is made to mean a facet of an individual, as with the Trinity of the three persons in a unique God by the teachings of the Roman Catholic Church.

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