

1. Identity in Economics, and in Context

Unique identification today is much as it was when last names were adopted in Western Europe – all about money. Early on, governments adopted identity to enable taxation. Now businesses are creating and using identity systems in order to decrease their own risks, by shifting risks and fraud to the identified people. Companies seek profit in cheap credit, while individuals are burdened with the risk of ID fraud.

How much is it worth to have an identity, to know someone else's identity and to lose or protect your own? The technology is disguising these core debates.

Current investments in identity management are targeted at increasing the speed at which human-readable identity information can move through data and money processing systems. The result will be an even greater explosion in identity theft. There is another option: privacy-enhancing, hardware-based, fraud-preventing credentials. Yet the second option is expensive and threatens the income flow of data aggregators. Adopting the second option requires clarifying the profound confusion of identities, which work for humans, and credentials, which work for networked computers.

Identity is built and constructed within an economic context. Anyone who has ever left the office for the bar or the PTA meeting knows what it means to change shoes and economic roles on the way. In each sphere we might introduce ourselves differently. Going from work to the bar indicates the transformation from productive employee to indulging consumer.

At some times and in some places, the identity "Professor" or "employee" is relevant. In others, it may be "author," "customer," or "parent". Each of these corresponds to economic roles. "Treasurer of the Parent Teacher Organization" indicates a trusted volunteer who will likely not leave a job worth many more times the ten thousand in the PTO treasury. Identities are specific or general, and defined by role and context. For example, consider the incredibly specific and simultaneously perfectly generic, "darling". This is defined entirely by context.

Even people with the most focused lives--those who identify themselves either through their paid employment or parenthood in public contexts-- have private interests within which they use different identities. Employees rarely pay mortgages through the office accounting system, and peace in marriage can be grounded on separate checking accounts.

Changing jobs results in a new identity in the modern sense of the word. A change in position may result in a different credit limit and different

privileges on different networks. A change in jobs frequently means a new place to live, with an entirely new set of identifiers sharing soft magnetic charges in an old wallet. Park Street Video and the Science Museum memberships are discarded for Horizon Video and the Discovery Museum along with the disposal of the old employee ID. Some things will not change. Linking the steady essentials to the transient creates economic risks. I have always paid my credit card bills on time. Linking the resulting right to get a new card with a telephone number allows someone to use the transient to access the constant – by getting a cell phone and pretending to be me.

In terms of identity and authentication, a change in professional affiliation results in a change in authorization in some contexts but not in others. When can that be a problem? It can be difficult to fully understand the risks associated with keeping information linked or discarding it. The risks of keeping all the information around, and the risks of deleting information are both very real. Sorting all credit card numbers and associated PINs in a single computer file enables a quick recovery in the case of a lost wallet. Many self-help books about managing your finances recommend it. For example, Microsoft Money will help manage accounts. Yet the existence of this handy file increases the risk of loss, and makes possible a larger loss in the case of a copied file. Keeping no records of credit card numbers and not writing down PINs decreases the risk of wholesale loss, and are recommended computer security practices. This also increases the difficulty of recovery if there is a loss. In fact, since many users do not keep such records, credit card companies authenticate individuals on the basis of a Social Security number thereby opening one path to fraud (using a false SSN) to address a good security practice (unique PINs and codes that are never recorded). The risks are cumulative and sometimes quite subtle until the worst case casts ugly highlights on the costs.

Today identity is more than anything economic. And the technology used to create, utilize, and protect identities is increasingly ill matched to the economics and uses of identities. To understand the problems with constructing economically viable and useful identity systems, it is important to begin with an examination of identity papers. Because of the familiarity of the tactile traditional identity paper this model is often in mind when considering identity issues. Yet the paper model is flawed.

Where are Your Papers?

Identity papers are the technology that underlies the assumptions in many digital systems. Understanding the economically perverse system of modern identifiers requires taking apart the various functions and characteristics of identity papers. Then given these functions taking a look at the mismatches with digital technologies, the next chapter addresses the core symptom of a broken system: identity theft.