

Institutions are People and Leadership is Key

In Conversation with Flávia Lacerda

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Q: I understand that you were studying information architecture before the term became popular. Tell me more about that.

I started studying information architecture in the late 1990s, at the time the first edition of the polar bear book¹ came out, which feels vintage now. I have a

¹ Morville, P., & Rosenfeld, L. (1998). Information Architecture for the World Wide Web (1st ed). O'Reilly Media.

background in information science and information technology. In 2005 I completed a master's in Information Architecture at the University of Brasilia, Brazil, and ten years later I finished the PhD, both oriented by professor Mamede Lima-Marques. Andrea Resmini was my supervisor in the doctorate too. My last academic adventure was a specialization in public policy evaluations concluded this year, where I investigated the impacts of the governmental agenda on the internet of things for smart cities, focusing on issues related to citizens' privacy and data protection.

Since 2005, after my master's, I've been working at the Brazilian Federal Court of Accounts (TCU). For the first nine years I worked in their information technology division. I was responsible for the corporate portal, what you could say is the result of my very first project for the Court. I was tasked with the redesign of the information architecture of the existing web solutions, converting them to a portal concept. It was a huge, yearlong project during which we transformed the many independent TCU' websites around the country into a coherent and cooperative platform. The Court has offices in every capital of Brazil, and when we started in the job, they were still all managing their own platforms independently, resulting in a very disorganized, confusing landscape. Identifying larger patterns, standardizing structures and language, that alone involved plenty of taxonomy and visual identity work.

For the last seven years, since 2014, I've been focusing on the continuing education for public servants, mostly auditors, at the Capacity Building Institute of the Court. We run quite a lot of extension and specialization courses, now, as everyone else, with this challenge to convert them into an online format. I mostly manage, but I do participate in the day-to-day conversations discussing the students and teachers' experiences and journeys. So, I still do a lot of information architecture work, whether it is in my job title or not.

Q: What sort of teams and people are you working with these days?

The teams that I work with vary in composition, but it's fair to say that the majority of the people have a legal background. Others come from the information technology and education sectors. I'm personally in charge of the postgraduate and research department, and institutional relations.

The core mission of the Institute is to promote personal and professional development for TCU's auditors and employees, public servants from other institutions and citizens. The main subjects we focus on are public sector audit, financial audit, government accountability, data science, public policy evaluation, regulation and legal issues. We offer education and research programs, disseminate and apply knowledge management and innovation methods to improve the public

administration, supporting the work of audit courts from Brazil, Latin America and Caribbean.

The Institute has an innovation lab that spreads and implements design thinking methods and co-creates solutions together with the public managers from other agencies. In the last few months, the lab team has been running a project focused on government procurement of spatial technology, to investigate with the actors involved ways to deal with the challenges and limitations of current legislation and other constraints in this kind of project.

Q: It sounds like you are doing more strategic work now than you were at the beginning of your career. You are setting up a vision for how people need to be interacting with information that you think is important, and figuring out how to get important ideas across. You work with people to set strategy, and you implement that strategy by working with auditors on how courses will be built and what they will look like. Do you feel like you are still doing information architecture work?

I sure feel like there is continuity in my work from the beginning until now. Information architecture is my lens to the world, so it's easy to see it everywhere, in every project. When I'm trying to make public policies better, am I not following in Wurman's footsteps, "making the complex clear"? Public policies are information after all, information people need to understand and interact with. Brazil passed its own General Data Protection Law (LGPD), based on the European GDPR², in 2018. If people have to be aware of their rights when it comes to their online sharing of data, policies such as the LGPD have to be explained and clarified in ways that a layperson can understand them, not just the lawyers. This is information architecture, and it's necessary. The government is giving in under the push of tech companies that promise all sorts of free services in exchange for access to our data. While we don't need a dystopic posture or to reject technology advances, we sure need widespread awareness of the long-term pros and cons of any such behavior.

This graphic illustrates how the lawmaking process is slower in Brazil than in the average of other countries when it comes to adaptability of the legal framework to the impact of technological innovations. This has remarkable effects on people's lives, especially in the context of smart cities and pervasive technologies like IoT. If I can help a little by making things clear and simpler to understand, I'm part of the solution.

² An English translation of the Brazilian LGPD is available on the website of the International Association of Privacy Professionals (IAPP). <https://iapp.org/resources/article/brazils-general-data-protection-law-english-translation/>. The text of the EU General Data Protection Regulation (GDPR) is available at <https://eur-lex.europa.eu/eli/reg/2016/679/oj>.

Q: Van Gigch and Pipino's Meta-Modeling Methodology, the M3, which you discussed in your PhD research and that became a chapter of "Reframing Information Architecture"³, has been used as the basis for all subsequent yearly conversations at the roundtable. It helps facilitators clarify the relationships that exist between practice, theory, and epistemology, something of the utmost importance given we have both academics and practitioners in the room. We always introduce it at the beginning of the day, and we make sure that everybody has access to the model so they can situate the current conversation in its rightful place. What's the story behind your adoption and adaptation of it?

I should share whatever little merit there might be here with Andrea (Resmini), who was my advisor at Jönköping University in 2013. We used to have weekly conversations in which we would discuss my research in information architecture from any number of different perspectives, including how to critically approach a possible systematization of the field: the practice, education, research. I remembered using the M3 in my master's dissertation in 2005. I discovered it when a colleague from my research group showed me an article citing it. It was not easy to find the original paper at the time. I got it from an online service in a Kansas City library.

I was planning to use it again in the PhD thesis, but just as a methodological piece. I thought there was something interesting there that we could apply in a broader approach, but I wasn't sure. So I brought it up in one of the conversations with Andrea, discussed it as a possible way to help me frame the discourse, and asked for his opinion. He thought I had something important there, some piece we were missing, and insisted that I work on it.

The M3 is a high-level framework that can be used to discuss any field of knowledge: going back to it, I was struck by its immediate applicability. I guess we had rediscovered the M3. So many articles, talks, presentations flatten everything to the level of the practice, paying little to no consideration to reflection or to separating practical dos and don'ts from theory: the M3 helps explain how these two are different. I ended up drafting an article with Mamede (Lima-Marques). Andrea thought it was really good, and that it was key to so many of the conversations we were having. The results are in *Reframing Information Architecture*, in my thesis, in a couple of other articles we wrote together, and at the Roundtable.

I must confess that when I attended the Roundtable in 2015, I was so amazed to see we'd get to discuss information architecture from a philosophical standpoint at

³ Van Gigch, J. P., and Pipino, L. L. (1986). In search of a paradigm for the discipline of information systems. *Future Computer System*, 1(1). Pp. 71–97.

⁴ Lacerda, F. and Lima-Marques, M. (2014). Information Architecture as a Discipline—A Methodological Approach. In Resmini, A. (ed.) *Reframing Information Architecture*. Springer.

the Information Architecture Summit. That is a rare opportunity in our community. Our events have been extremely practice-led so far.

Q: Tell me about information architecture in Brazil.

We are facing dark times for sciences in Brazil, even before the pandemic⁵. Scholarships and research funding are being cut, and higher education programs are suffering as well. My own academic home, the Research Center for Information Architecture at the University of Brasilia, led by professor Mamede, has been a victim. We were a strong united idealistic group there, but when he retired in 2018, the center closed down. Institutions are people, and leadership is key. We still have information architecture courses in the information sciences, at the undergraduate and graduate levels. Technology-oriented programs also run courses in information architecture.

But this is nothing like the golden times we had before: programs on user experience have taken center stage, and this, at least to me, is problematic. My personal take is that user experience is an aspect of information architecture, not the opposite. Information and the way it's structured is the foundation, it's the raw material we work with, in all of its forms - visual, tactile, audible. We can aim to create experiences, but each experience is unique, individual, subjective. In some ways, it feels like we're reducing the field of architecture to the "resident experience" and building higher education curricula only concerned with that specific angle.

Brazil has been for a long time very active in information architecture research and education. But the practice of information architecture has seen a shift, with user experience becoming the anchoring identity and covering everything from user research to information architecture to interaction design. We have seen changes in the academic background of this new generation of practitioners: while some still come from information science or technology, a large part of them comes from design. Advertising agencies dominate the market of information architecture and user experience in São Paulo and Rio de Janeiro, the biggest capitals. Brasília, where I live and work, has mostly government and public institutions, so, expresses a different market, but it is also dominated now by user experience practitioners. Anyway, regardless of the title, if the job is being done with the appropriate methods and techniques, great!

Q: What would you consider to be the most important part of your education? Also, if you had a chance to go back and do something differently, knowing what you know now, is there anything you would change?

⁵ Global coronavirus pandemic of 2019-2020.

I think the most important thing I have today is that part of my education which gave me a systemic view. That is what gives me the capacity to deal with wicked problems, with complexity. I think this is independent of the area of study or background from which someone might come. I'm very grateful for this lens I was given. If I could do it all over again, I guess I would take an undergraduate course in architecture. That is the only thing I would change: I would do the same master's and PhD, but I would want to have an architecture background. Anyway, during these years, I have learned, working with others who have studied architecture, that what we do is architecture, just made of information instead of bricks. The more I learn, the more I agree with that statement.

About my original academic formation, I would like universities today to be more focused on information sciences, regardless of specific support or service, such as books or libraries. At least here in Brazil, it seems to me the field is too attached to its past, with market reserves and methods that are no longer justified at the present time.

In these last years, the role of digital information in everyone's life has increased immensely. We have many important things to work on, many important conversations to have that deal with huge problems, those that live at the upper levels of the M3, and people are still discussing information architecture as a website-only practice. How many pixels to the right, what color, what font? It's not like those are not important details, but if we obsess over them, we'll completely miss the picture. Websites are one of the many outlets of what has become a really pervasive information layer: mobile devices, the Internet of Things, smart objects, smart cities. If we don't care for the picture, we risk seriously damaging our societies. Everything requires a thoughtful information architecture today: our politics, our healthcare, our education systems. I don't know if it is the same in other countries as in Brazil, but just see a few information science courses concentrating on the foundations of information architecture, even considering such problems.

When I was doing the PhD, the information science faculty had an information architecture research line. But not all the professors recognized the work we were doing on the research group. Unfortunately, some of them simply didn't consider it to be information science. We certainly have a lot to contribute to the field and everyone would benefit from more multidisciplinary views.

Q: If we are dealing with environments in which information is becoming pervasive – people are constantly immersed in a flow of information – how do we structure the way in which people receive the information they need?

Like I said before, information is what we work with: information is the material we use, it's a thing, as Buckland famously wrote⁶ in the 1990s. Information architecture is what makes this thing available to people. You can't really design the experience, since it depends on what actors, users, bring to the situation themselves. We can give them scaffolding, structure, architecture, but creating the actual experience requires the presence and action of the person.

This is a phenomenological perspective that distinguishes between subject, object and experience in terms of relation. We must understand the subject, so that we can act on the object meaningfully, for example improving its affordances. But we can't guarantee an experience: we are architects, we model information. This is the reason why transdisciplinarity is so important, what justifies bringing in theories and methods from the cognitive sciences or architecture, for example: we have to understand the subject as a system and its interactions with other systems - actors, objects.

What we decide is whether we are presenting these people with this information at this time, if we allow them to act upon it or if we need to keep them away from it. All of this comes before deciding how they will interact with the "thing", what kind of feedback they might receive from it, in what fashion, and how that will change their experience. As Andrea often says, the structures we create might in the end be implemented as digital touchpoints, as physical artifacts or environments, or any mixture of these, but these are not concerns we should be considering in the early stages. He thinks of this process as being very close to the way a city planner would structure the plan of a city: they figure out where the streets will be in relation to buildings, where there'll be green spaces, what density, how people will move around. This plan comes way before we start deciding whether a certain building will be in red bricks or glass and metal and whether the shop on the corner will be a café or a grocery.

Q: Jorge Arango makes a similar interesting observation in his book "Living in Information". He also brings in an architectural perspective, but compares the way we work more to the way we would seed and tend a garden: we nudge, but we're not entirely in control, and we're never really sure of the outcomes. I'm not sure I entirely agree, but it's certainly an interesting reflection, and one that

⁶ According to Buckland, the term "information" had traditionally three meanings, one of them "used attributively for objects, such as data and documents, that are referred to as 'information' because they are regarded as being informative", and that this specific meaning "appears to be becoming commoner" in "the practice of referring to communications, databases, books, and the like, as 'information'". Information as a thing is what any field dealing with information systems deals with. Buckland, M. K. (1991). Information as thing. *Journal of the American Society for Information Science*, 42(5). Pp. 351–360.
doi:10.1002/(sici)1097-4571(199106)42:5<351::aid-asi5>3.0.co;2-3.

reminds me of your work with Andrea Resmini, when you discuss the difference between designing “within” the ecosystem and designing “the” ecosystem. The point you make is that it seems unreasonable to claim we can design something we have a hard time modeling and that we don’t really control.

Exactly. It’s a systemic principle. We affect the ecosystem, but predicting its behavior and outcomes is beyond our possibilities. These ideas are related to the ongoing global conversation on reframing information architecture that was the spark behind the first Roundtable. Jorge (Arango) has always been a part of that, so I’m not surprised that a common way of interpreting things emerges from our individual discussions. That’s why we spoke of designing in the ecosystem: we’re not creating ecosystems from scratch, far from it. We’re adding, changing, moving around elements to promote experiences. So, for sure there is a lot of nudging. In behavioral economics, nudges⁸ are a way to influence automatic, irreflective behavior. It has been used to influence people's actions in public policy design. For example, with respect to COVID-19, we can look at what Singapore is doing compared to China: China tracks everyone, Singapore instead created a system that nudges people into being cooperative. In information architecture, that speaks to what we’d call bottom-up approaches.

It’s clear for me that the system thinking frame of reference is one of the greatest contributions of transdisciplinarity to information architecture studies. In the moment we shift the paradigm from information pieces – websites, nodes – to entire ecosystems and the relationships they contain, we inject one more necessary element into the debate going on at the epistemological level of the discipline. That way, we reframe the debate to another baseline, to a broader perspective that considers people, objects and places as connected elements that communicate with each other as a system. This is the transformative dimension of information architecture I’m interested in.

⁷ Resmini, A. and Lacerda, F. (2016). The Architecture of Cross-channel Ecosystems. Proceedings of the 8th International ACM Conference on Management of Emergent Digital EcoSystems (MEDES’16); Lacerda, F., Lima-Marques, M., and Resmini, A. (2018). An information architecture framework for the Internet of Things. Philosophy & Technology. Pp. 1–18. <https://doi.org/10.1007/s13347-018-0332-4>.

⁸ Thaler, R. H. and Sunstein, C. R. (2008). Nudge: Improving Decisions about Health, Wealth, and Happiness Yale University Press.

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