

The Last Mile of Learning[©]

A Thought Paper on the Future of Digital Learning
By Don Jones



“It breaks apart the journey as seen by the different actors within it”

Learning actually happens within an individual, so while distribution systems are, and will be, massive and global, learning actually happens individually and thus locally. That is why the design of the interface of that last mile needs to fit the local and individual contexts, rather than only satisfy the global and collective ones. In distribution systems, the last mile often accounts for 28 percent of the whole cost to move goods, even though those goods might move thousands of miles. The last mile is always disproportionately expensive compared to the rest of the journey. The main reason for this is that the last mile is also disproportionately complex, rich in multiple transit connections and the systemic elegance of economies of scale runs full throttle into the reality and nuances of delivery, acceptance and application requirements. Of course, any distribution system needs robust long-distance infrastructure, or it is a moot point, but the last mile is where much of the value is gained and/or lost.

The problem with past and most current digital learning and development journeys is that we do not do enough to recognize that the last mile is significantly different from the rest of the journey. We treat the local, individual, last mile much like the rest of the journey, and we fail in helping the learner make proper contextual connections to the content that the system has carried. The rich and individualized local human requirements of the ideas disseminated are not taken into account or designed to work easily and seamlessly.

This paper examines the challenges and

opportunities for digital learning. It identifies and focuses on the most significant hurdle to finally cross - the last mile of the digital learning journey. It considers the radical difference between the last nuanced rich mile and the thousands of mass transit miles that have preceded it, and the different skill sets and perspectives that are needed for the effective design of both. It breaks apart the journey as seen by the different actors within it. It lays out the principles that can be applied to target limited resources to specific areas of the digital learning journey for most positive impact. Finally, it makes the case that technology itself is no longer the barrier to deep, meaningful, emotionally rich, intellectually challenging learning experiences - it's design. The costs and capacities of technology are such that we have enough, and we will soon have access to even more. But now the solution is in our hands to build the human nuances of a learner's digital 'acceptance' and 'application' in consort with the technology architecture, rather than on top of it.

The Last Mile of Learning makes the case that the integration of technology and human design across the three stages of the last mile: delivery, acceptance and application, facilitated through the initial act of creation, hold the keys to unlocking the almost unlimited human and digital potential that lie within the present and future of learning. The solution requires a design esthetic that integrates the perspectives and aspirations of both art and science. We have everything we need within our grasp and our team's design experience shows us that it is not only possible; it's inevitable...

The First Mile

Learning is never only a one-way journey; it is an ongoing relationship between learners and content and context providers, between learners themselves, and more broadly, between learners and the world around them. The reciprocity of a meaningful learning relationship also begins in an individual locally; therefore, the last mile of learning is also the first mile. So this last mile becomes doubly important and very rich indeed, requiring a huge number of successful transit points, going in multiple directions at once, before any real value can be planted, let alone be harvested. This part of the journey is incredibly complex. One way to break it down and make the examination manageable is to understand more about the two places that have the greatest potential for in-transit failure, the technical infrastructure and the last inch of that last mile.


The Technological Infrastructure(s) - The Carriers First, and at the most fundamental level is the technological infrastructure(s), the actual physical and digital carriers involved with the learning journey itself. These include the ways and means of delivery and the specific platforms, devices and locations used to access the content or experience. It also includes the complex transit or conversion points between all of those ways, means and access options. These digital transit points are limited by: the requirements of the technology systems that carry the information or experience, by the choices of the providers and by the design of the 'containers,' packets of information, which are on these carriers. Ultimately, they are limited by the intelligence embedded within the design of the system used to censor and filter itself in action.

The last mile is always littered with multiple devices and platforms independent of the learning creators. The learning consumer will have an increasing number of multiple combinations and

permutations of wearables, iPods, smart phones, tablets, desktops at work and at home, using multiple PC, Mac and Android platforms.

The global sales of PCs are flat-lining as consumer demand is migrating quickly to the increased power and convenience of smart phones. This growth in smartphones will only be accelerated by declining price points, and the fact that at the time of this writing, they are only about halfway through their device adoption curve. The world is going to be massively mobile; however, the choice isn't mobile 'or,' it is mobile 'and.' The last mile and the future of the digital learning is not only mobile but multi-device.

The 'internet of things' will further extend the reach of the ways that learning will be experienced and consumed. Some things currently being learned by an individual will in the future be better learned by that learner's ecosystem of devices. 'Who or what needs to do the learning and when?' is not a trivial question to answer.



“The reciprocity of a meaningful learning relationship also begins in an individual locally”

“technology itself is no longer the barrier to deep, meaningful, emotionally rich, intellectually challenging learning experiences – it’s design.”

How are people currently using their devices? The average US consumer divides their time between multiple devices as a normal part of their day: TV--43 minutes, PC laptop--39 minutes, Tablets--30 minutes, and Smartphone--17 minutes. Tablets and mobile are dominating in the after 6 PM time slot. Interestingly, each time they pick up their Tablets they spend on average, 30 minutes with it. Not only are consumers using multiple devices, but they are becoming more comfortable using them at the same time. Nearly half of the US population uses their smartphones while watching TV every day. And they use the 58 minutes they now spend daily on their smartphone in increasingly creative ways: talk 26%, text 20%, social networking 15%, websites 14%, email 9%, games 8% and other 8%. The consumer is interacting with and expecting more from their mobile devices, they are a part of every aspect of their daily life.

Mobile is the only media that is growing and is enabling new forms of entertainment, communication, commerce and education. Consumers are using multiple platforms, with Android coming out the winner, but they want and are beginning to expect better cross-platform connections as evidenced in the huge growth of a recent entry in the App market, WhatsApp, from 200 Million users in 2012 to 300 Million in 2013, which allows for seamless texting between platforms and devices. The overwhelming picture is that our learning consumer will expect increasing

mobile and seamless multi-platform access to what they want to learn when and how they want to learn it. This Screen fragmentation is creating big learning integration challenges, as well as a huge distribution opportunity. However, it is not one that we face for the first time.

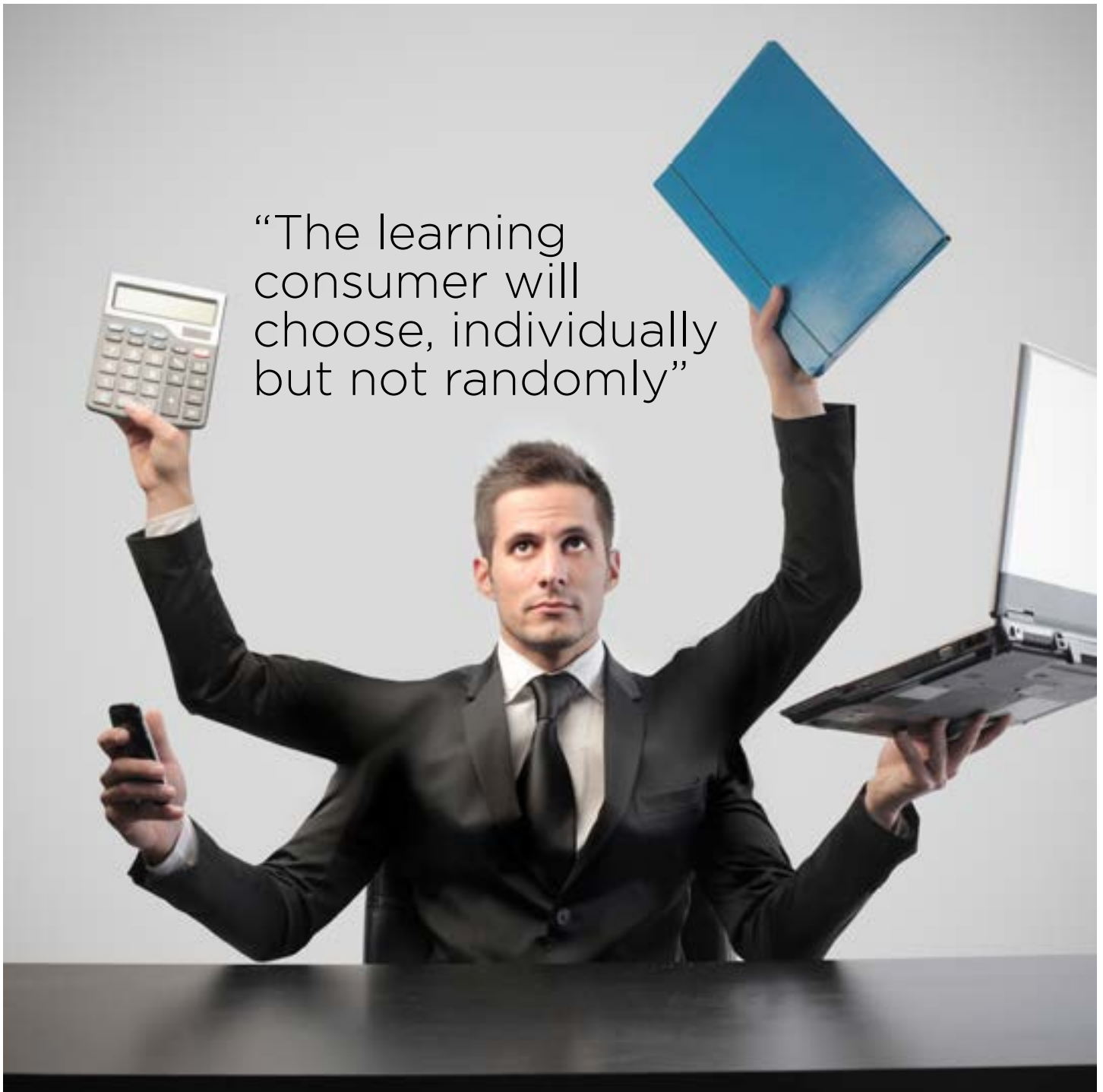
The development of shipping containers in the physical transportation industry, although ubiquitous in hindsight, was not a trivial insight at the time. It was a brilliant, high quality and cost-effective solution to this in-transit, mass-to-individual transfer point problem. How do we efficiently and consistently move massive amounts of ‘stuff’ from here to there? And how do we do it when our mass shipping must connect to different technologies, such as rail or trucking platforms, with all of their inherently nuanced needs and requirements. In our digital distribution system, the platform on which the learning is shipped is often completely isolated from the arenas and contexts in which that same learning would be best experienced and/or applied. The technological infrastructures are not perfect, but they have advanced considerably and they no longer remain the most significant barriers. The largest hurdles now lie in the creative design of the containers themselves - in the way we think about the integrated design of learning. The development of smart digital ‘containers’ easily transferred between technologies requires more thought on the design side than the actual technology side, but both have to be considered together. If 28% of the cost of the physical transport of material goes into the last mile, easily this much, or more, of the digital technological costs needs to go there in order for the learning consumer to leverage the value of that journey. Yet today, organizations are spending tens of millions on delivery infrastructure, but scrimping on the last mile, the design of learning acceptance and application, with predictable results. As an example fully 85% of participants in Massive Open Online Courses (MOOCs) do not finish the course.



“Learners need to attend to the environment around them”

The Final Inch

By far the most powerful learning tool we need to recruit to assist learners is almost unimaginable in its scope and capacity, as well as in its mystery. That is the people themselves; their whole selves: mind, body and spirit. It is located in one place only in the conveyance of learning, in the last inch of that last mile. We don't control these valuable resources; and it would be futile and counter-productive to try, but we need to influence their behaviour. We also don't fully understand, despite all of our great learning theories, how the human mind actually encodes and transfers experience into deep learning, easy retrieval and true change, but we do know that it requires some level of attention. Learners need to attend to the environment around them. If the last inch of that last mile does not generate enough attention and engagement to create sufficient energy release within that person, then all content and context is lost regardless of the great distance it has travelled. However, if that inch creates sufficient energy release, then that person will on some level become engaged in and excited by the learning process. They will 'try on,' accept or challenge what is being delivered; any of which is a meaningful transaction and the required foundation for true learning, development and change. But that last inch is very different territory than the last mile that it sits within, and has a radically different set of cultural norms and rules than the thousands of miles preceding it. The last inch requires individual and contextual nuance, not mass scale, human texture and random colour; and heaven forbid in the world of learning, but it must include honest flaws, gaps and imperfections versus sanitized, gleaming, smoothly confident certainties. Most importantly and profoundly, the last mile of learning requires the navigation of a myriad of known and unknown transit points that exist, not always consciously, inside the learners themselves.



1. Contextual nuance not mass scale.

Without context, information is meaningless or worse, dangerous. The learning consumer needs to relate content and experience to their personal context before they can see why it is relevant to them or even understand it. To add to that challenge, consumers do not have one context; they have many. The learning consumer will choose, individually but not randomly, when and how to consume or attend to their learning. The potential to influence the learner to access and focus their own creative internal learning resources and attend to our specific ideas lies in the patterns that emerge from those individual but, mercifully for us in design, non-random choices.



“Our brains, bodies and spirits simply don’t work that way”

2. Human texture and random color.

Currently, digital learning is mostly ‘cold.’ It might on occasion be technically efficient, but we do not miss it when we turn it off. The research says we turn it off in droves. Unless we have a legislated requirement to complete the learning event, the overwhelming majority of Massive Open Online Courses (MOOCs) or on-line Tutorials are left unfinished. They are, in less than technical terms, lifeless and boring. Human texture and random colour is required because learners are looking for the character of, and a personality inside and behind their learning. They do not do this superficially or for entertainment alone, they do this to protect themselves from being sold a ‘bill of goods.’ Counter-intuitively for some, it does not facilitate learning to focus solely on the learning content, to strip content bare of its messy contextual life and to only shift the technical distribution of cold content. In fact, it is distracting, annoying, artificial and on some level even insulting to do just that. Our brains, bodies and spirits simply don’t work that way. Learning needs to feel human. It needs to have texture and colour, and it needs to be ‘warm.’ Warm is not meant to imply ‘warm and fuzzy,’ or ‘cozy and easy.’ In fact, it can be stressful and real and hard and challenging. But it could mean ‘warm and fuzzy’ if that is what you are trying to convey. Warm means real and human.



“The best teachers are a gift to our society”

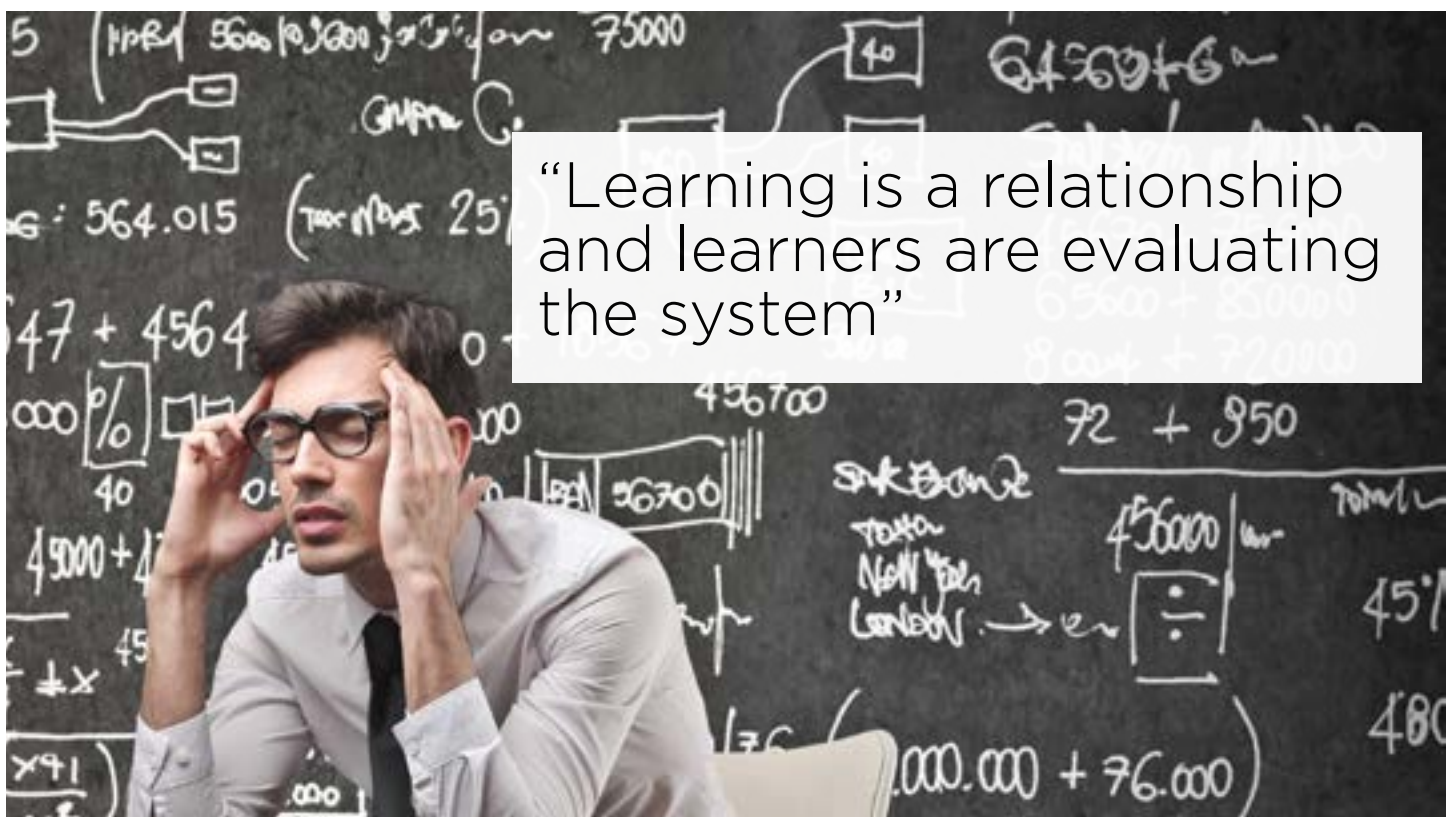
3. Include honest flaws.

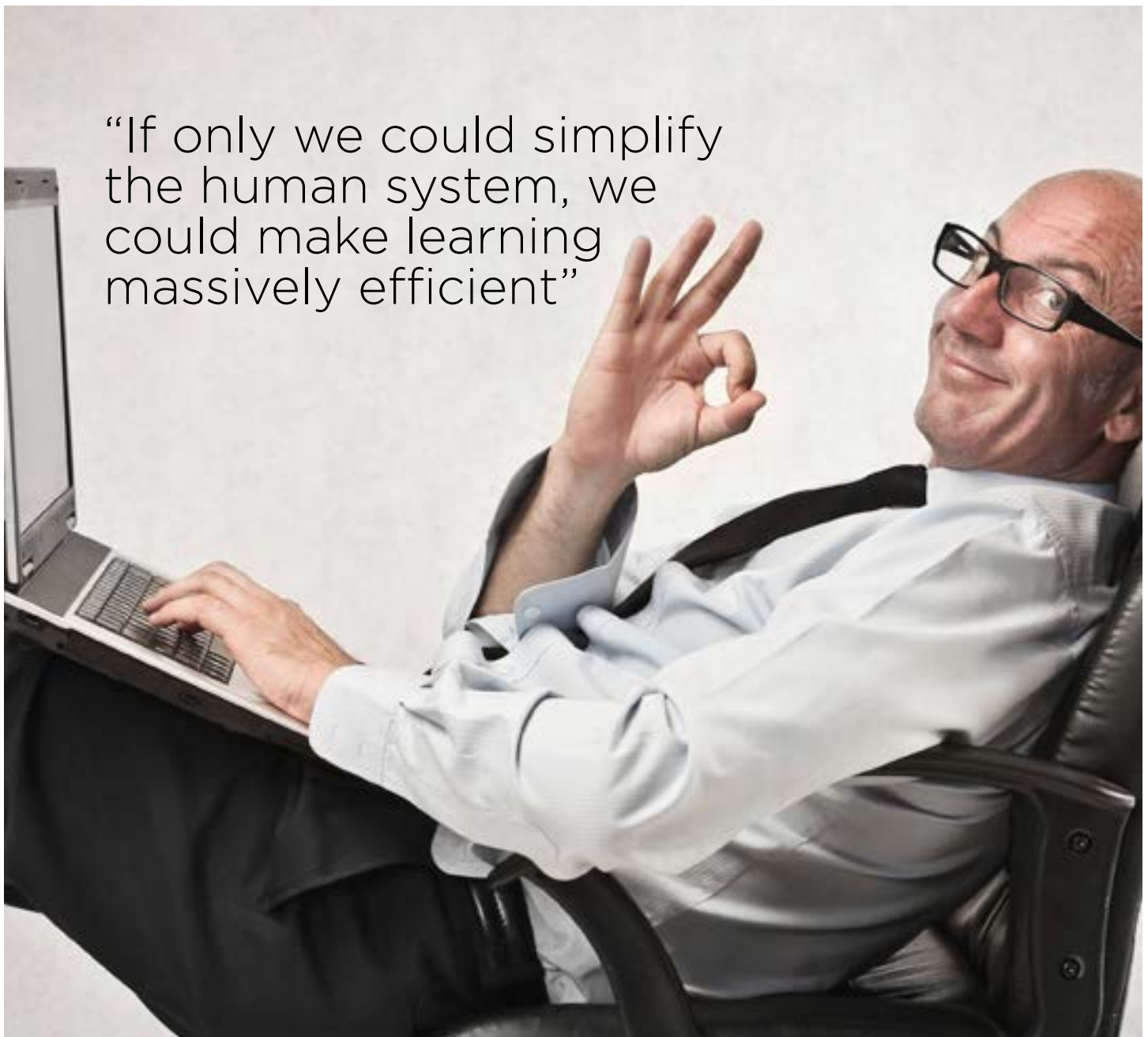
These flaws, gaps and imperfections in our true understanding of what it is we are presenting need to come through in the design itself, versus sanitized gleaming, smoothly confident certainties. In traditional classrooms, a confident, skilled professor, teacher or facilitator conveys these imperfections not shown in the bound textbook so seamlessly that we take their deep talent in human relations for granted. We shouldn't. It is a sophisticated and nuanced set of skills and behavioral attributes that has evolved through both profound and painful teaching experiences and years of learning interactions.

The best teachers are a gift to our society and they know that they walk a razor's edge with keeping the respect and attention of learners. They need to offer something to the student, or allow the student to find something they do not currently possess. They need to convey that the lessons will be worth the investment of the student's time and attention. Yet, in subtle or direct means, they need to express the boundaries of what is known as well. If they convey not enough credibility, or its equally superficial twin, supreme mastery, they will not optimize their learning relationship. Finding that line for a particular audience is not a science, it is an art. If it looks easy, it is because you are watching a truly gifted teacher. If you want to find out how hard it really is, try teaching a semester at any level. You will walk away appreciating the hundreds of almost invisible transactions in a class between the teacher and student and between the students themselves that accompany the content that is also being delivered. The best teachers convey all of this in the first ten minutes of their interactions with students, though to a casual observer or even an unskilled teacher, they would mostly go unnoticed. That is not to say that all teachers are great at it; some are not.

Digital learning has paid very little respect to the depth and nuanced talents of these learning professionals. In fact, it has to a great extent distanced itself from their years of evolutionary progression. This has been a huge mistake and has led to the current bland, arrogant state of online learning. Digital learning providers, like many corporations, have cut out the modest and talented middleman and are only finding out now what these individuals actually facilitate. Without at least that deep respect and nuanced understanding for what great learning requires, it is no great surprise to wonder why digital learning has been so lifeless. It does not mean that digital learning does not have a future without a physical teacher. No, that is not the case. Great digital learning experiences will be a magnificent alternative in the learning universe when we fully appreciate the depth and sophistication of the last mile of learning. Great teachers in a classroom will always have a place in our learning options, but digital learning's future will significantly progress through the appreciation of their real talents, not a discounting of them.

Learning is a relationship and learners are evaluating the system, scrutinizing its 'face,' so to speak, for all of those small clues of confidence and arrogance and many other things. Appropriately, learners form an opinion of whether to trust this system or not. But the current 'faces' that digital learning presents are artificial, almost plastic surgeon versions of real. They have been scrubbed of every imperfection and have lost the very human qualities that would allow others to connect to them. Human and learning imperfections are not imperfections at all – when they are accepted, they are 'character' and it is how we actually 'see' who the other is, both past and present. The learner is consciously and subconsciously evaluating the teacher at all times; it is a permanent and necessary condition of learning. It is no different in digital learning and learners turn their sensors toward the system carrying the learning and to its nuances or to the suspicious lack of them. If they feel they can trust the system (warm), they will engage at a deeper level; if they feel it is phony, or disrespectful, or superficial (cold), they will appropriately distrust and disengage from it.





“If only we could simplify the human system, we could make learning massively efficient”

4. The navigation of a myriad of known and unknown transit points that exist, not always consciously, inside the learner themselves.

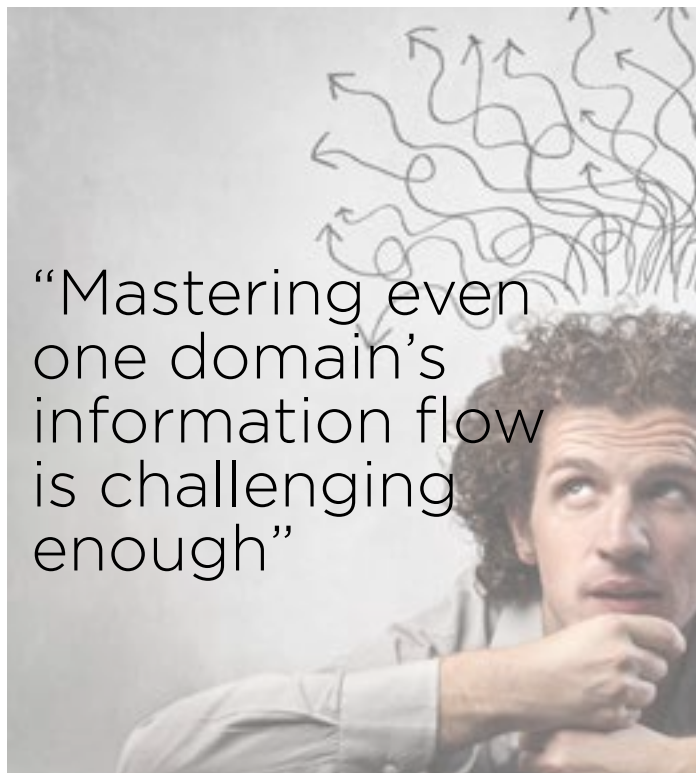
These transit or connection points include a huge number of intellectual and emotional local transactions that either enliven or disrupt the learning itself. If only we could simplify the human system, we could make learning massively efficient. Fortunately, you and I cannot be simplified in that sense. To be sure, each of us is influenced by the larger mass of humanity, but still each of us is individual, nuanced, interesting, infuriating, disappointing, heroic, comic and serious. Multiply that by thousands or millions of learners and you see the challenge of great learning initiatives. The final inch of the last mile is by far the most interesting one, the most complex, and the one that is fraught with the most challenges in the conveyance of context and content. It is also the one that has the most opportunities for positive impact and meaningful difference.



The Stage of the Last Mile of Learning: **Creation, Delivery, Acceptance and Application**

From a resource perspective, the last mile and, in particular that last inch of that last mile, runs completely counter to the economy of the entire system. And the question is not, 'Why is this so?' It should be evident that it is the most rich in transit connections and the most challenging part of the journey by a quantum leap. The question we need to focus on is, 'How do we make the last mile of the learning journey more alive for the delivery, acceptance and application of the ideas that have traveled across time and space to benefit that individual learner?' And the clues are, as usual, all around us.

To find some clues let's examine what these terms 'delivery, acceptance and application' mean in a digital context from the perspective of different actors in the system. And let's add 'creation' to that list as well. This may help to determine design priorities and focus the application of our finite time and resources to create the most positive impact in the digital learning journey.



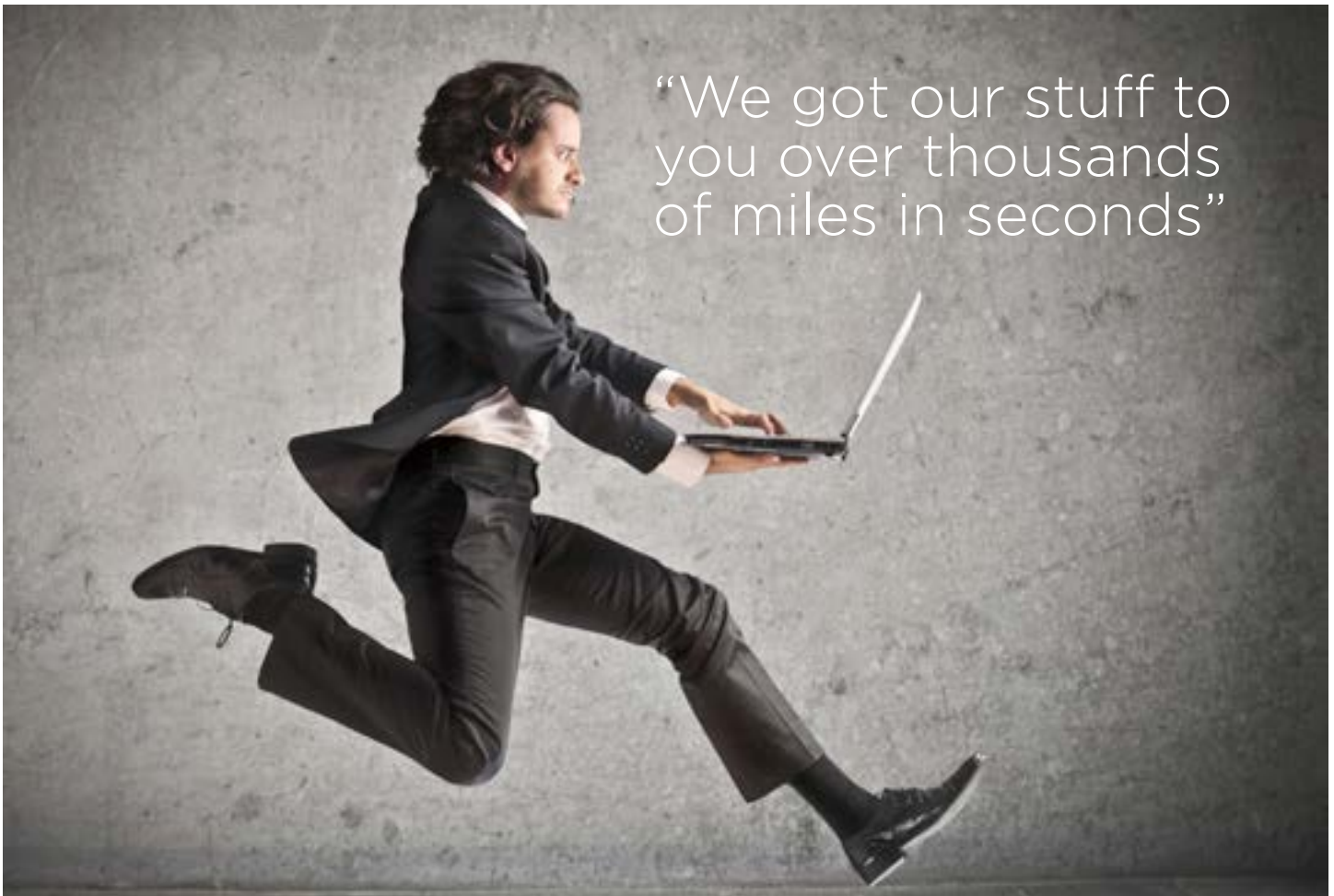
“Mastering even one domain’s information flow is challenging enough”

Creation: What is it that we want to transmit?

Learning organizations have focused primarily on disseminating content for thousands of years. Proprietary content was the most valuable, of course. Years ago, someone coming out of an elite educational institution would have had proprietary, or at least early access to information that others would not. Today, a professor at that institution, either in the classroom or supervising a PhD student teaching their class, has already freely distributed the essence of their life’s work distilled into a 15-minute TED talk, written a book that is discounted on Amazon Kindle for \$2.99 and has a blog that is free, tweeting updates as they gain new insights. All but the most brilliant or self-delusional have given up the idea of proprietary content in and of itself. That is not to discount the significant and deep value that might be had, depending on his or her personality and skills, with interacting with that teacher in person. But her content is less proprietary than it would have been years ago.

To a great extent, the world has changed and content has become commoditized. There is still proprietary specialized content that will add unique value and receive real value in exchange, but the percentage of that kind of content is shrinking as fast as Moore’s Law is expanding. The creation of the most valuable digital learning, and all learning really, now has to optimally focus more on context over content; how do we help our learners swim within the information flows they are currently drowning in? Even within each of our narrow fields of deep expertise, we are being overwhelmed with both essential and trivial information, and it takes time to differentiate the two. We are not overwhelmed because of some inadequacy on our part; it is simple math and the reality of our limited cognitive capacity to keep pace with the acceleration of new information in every field. Mastering even one domain’s information flow is challenging enough, yet we ask our leaders to be able to span multiple disciplines in order to reach optimal systemic solutions. And we ask that because we know it is required of leadership. Research consistently shows the simple and elegant solutions to complex problems often lie at the periphery or across the boundaries of separate domains. But providing leaders with more content is like throwing them bags of bricks as they tread water. If the best learning systems simply cough out more content and do not focus on context then we are at least sub-optimizing the use of limited time and resources to make an impact; at worst, we are doing great harm.

“We are not overwhelmed because of some inadequacy on our part”



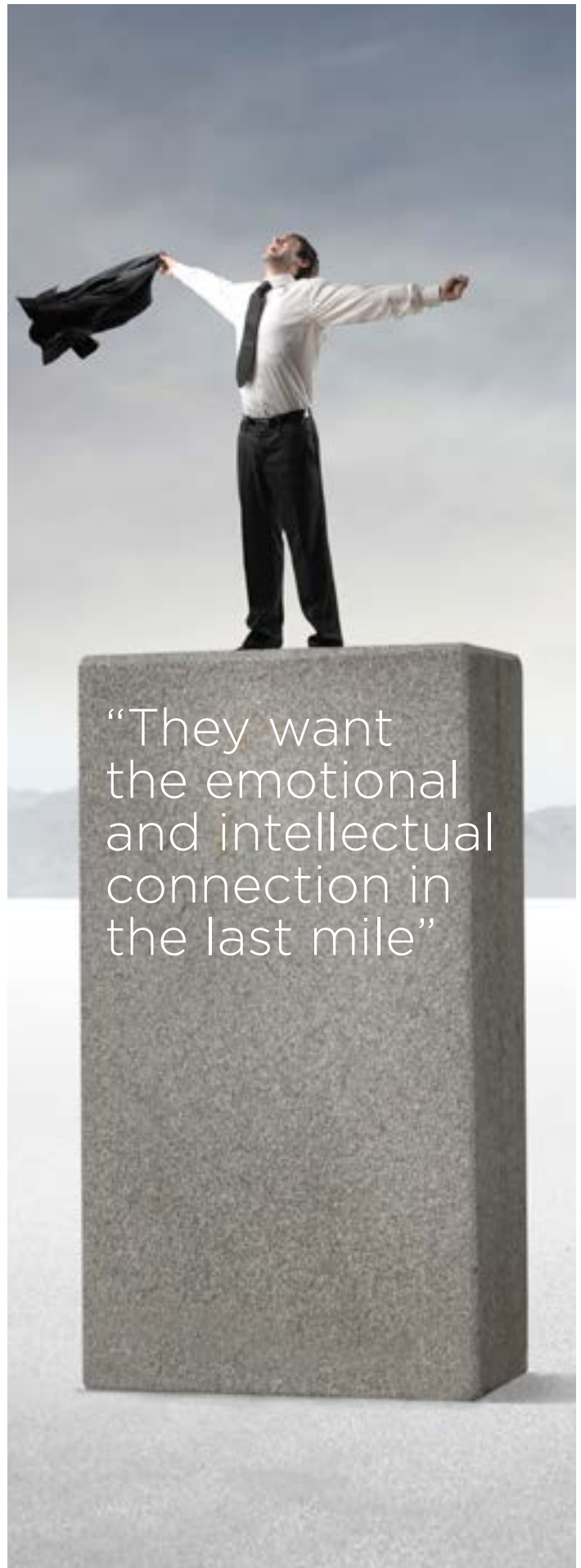
“We got our stuff to you over thousands of miles in seconds”

Delivery: How is the learning creator getting ‘stuff’ to the learning consumer?

This describes the transition and movement of the information and or experience from the external entity to the individual learner. It describes the journey from the point of view of the external supplier. This external entity can, for example, be an organization’s leadership training department, external supplier, university, college or school or the ‘prosumer’ of the content themselves from peer-to-peer learners. To a great extent, this delivery is infrastructure, the logical blueprints, the pipes and wires, the servers, platforms and devices we choose to use to deliver the ‘stuff.’ It describes the infrastructure that allows for content and context to be transferred. It should, but most often doesn’t, describe the high level architecture of how the transit points in the consumer experience will be navigated. Usually, these transit points are not included in the blueprint, when there is a blueprint. Metaphorically, the shippers are saying: “What do you mean how will you get the ‘stuff’ out of our ship’s steel hold to the thousands of individual outposts in the mountains and prairies and cities and towns during the monsoon winter and desert-like summers? That’s your problem! We are shippers and sailors!” Most digital learning design is metaphorically in the pre-container era, “We got our stuff to you over thousands of miles in seconds; what else do you want? You can take it from here ... it is only the last mile.” But this is a limited and non-productive view of our responsibility for the complete end-to-end learning journey. It is the whole system view that begins with creation, through to delivery, acceptance and application where the solutions await our hard work.

The true challenges of digital delivery are something to be proud of mastering. They are essential to the consumer learning experience. However, these technical solutions alone will not, for the most part, be seen or appreciated by the learning consumer. Consumers do not have to, nor want to, appreciate these nuances anymore than we are interested in hearing about the journey of how our television program was miraculously carried to us seamlessly across thousand of miles each time. It is a great feat when you think about it, but we don't want to think about it. We directly experience and appreciate the creative programs we consume and only give over our attention to the carriers of that program when there is a problem. It is useful to remember this because when the consumer chooses not to use our digital learning, which is happening in droves right now for most digital content, it is mostly that we have expected the consumer to marvel at our long distance instantaneous technical proficiency, and forgot that they don't really care about it. They want the emotional and intellectual connection in the last mile, the human nuance of the experience to make giving over their limited attention, acceptance, worth it. The delivery world and the external suppliers of the pipes and wires is currently a great world filled with brilliant caring people, but it's a world that primarily thinks in terms of blue ribbon, technical delivery solutions. Learners live in a world that operates in terms of acceptance. Both are valuable and necessary, but the two worlds are not even close to being the same or even sharing the same perspective.

“The true challenges of digital delivery are something to be proud of mastering”



“They want the emotional and intellectual connection in the last mile”



“The last intimate part of the journey is viewed through a human lens”

Acceptance: How is the learning consumer on an intellectual and emotional level experiencing their learning, or choosing not to experience it?

Acceptance describes the same journey as Delivery, however it is viewed through the lens of the individual consumer/learner and mostly focused on the pointy tip of the last mile. Acceptance is not about a consumer signing off on a neatly laid out blueprint. They do not experience learning or the world in that way. Consumers first have a feeling for the experience made up of many quick, conscious and subconscious judgments. Second, they have to have an intellectual connection to an experience. Acceptance is only partially understood by most delivery experts, and with good reason. The final few inches of the final mile are internal to the learner and mostly

invisible. This last intimate part of the journey is viewed through a human lens. Even for the most seemingly banal transactions, it is always logical and emotional. This messy heart of acceptance has as much to do with art as science.

Acceptance does not imply believing what you are being taught or what has been delivered. Acceptance within this system means giving of your attention to whatever it is that has been delivered. Challenging the learning itself can be an equally valid foundation for learning and change, but without the giving of attention, no learning will occur. Of course, there is more to talk about in the intimate act of acceptance after this foundation is laid, and that is another paper, but for this paper gaining true acceptance through deep attention is at the heart of learning. But now what will they do with what they glean with their attention?



Application: What value has been added to your learning journey?

Learning is, and always has been, one of the most powerful tools for transforming our world and ourselves. That is why we are in this business and profession. When we are fully engaged with learning, it is also one of the most exciting and vibrant experiences of our lives. We are actors, not spectators in our lives. Our experiences and actions make a difference. We want to experience and do 'stuff' that manifests ourselves creatively and more fully in the world. Learning adds value by augmenting our abilities and unleashing our potential to experience and to do more.

Application has to answer at least one of the following two questions from the perspective of the learner:

- What does this learning allow us to experience more fully, more deeply, more broadly, more empathically?
- What does learning allow us to create, produce and/or connect to?

The last inch of the last mile of learning is a thought or action generated by the learner. It is the pointy end of the learning journey and when truly given its due, it is spectacular in the magic and miracle of its very existence. That any one of us is not confined to our current limited set of skills, knowledge, insights, gifts and perspectives is the ultimate freedom. To say that learning is a manifestation of life itself is not an exaggeration, for without the ability to learn, humans could not grow, and without our ability to grow, we would not be sentient beings. To be human and alive, we need to learn; to be fully human and alive we need for our attention to be fully engaged

A Summary and Principles for the Pointy End of The Last Mile

Most of the digital learning up to this point has focused on the journey, the transmission across time and space of content primarily; less so to the context... to the learner. But the last mile has been treated relatively poorly and the effort and design of the last mile is where almost all of the energy of the system either dissipates or is focused. We have massive digital delivery channels now and we have no more easy excuses around why most digital learning is not working. Yes, our delivery pipelines and storage capacities will increase in size and speed and this will be a bonus, but we have what we need. We now have to turn our attention and resources to the design of the last mile to provide meaningful, engaging, rich, local, individualized learning experiences. We have the opportunity to marry global reach and massive deployment of great content along with the nuanced ability to create context for that content. However, we have to be willing to work much harder on the design of the last mile and the last inch of that mile, the in-context experience of the learners themselves, if we truly care about each learner's individual acceptance and application as much as we do about our internal systems of delivery.

The last and first mile are a rich and complex set of interconnections, transit and transfer points, where learning needs to disengage from mass transit and has to re-engage in individual and personal connection, relevance, and context on an intellectual and emotional level. A lot has to happen in that last mile and we need a set of principles to guide the design.

- M**ake it simple and esthetically pleasing.
- I**ndividualize the learning.
- L**everage context in learning and application.
- E**very time, place and platform – Now!

Make it simple, intellectually challenging and emotionally engaging.

In the last mile of learning, the learning consumers have competing demands for every second of their time. They need and expect three phases of the last mile of the learning journey to be simple to understand and use: the ramp into the experience, the learning experience itself, and the ramp off and transfer to application of the learning. These have to be intuitive, frictionless and clear. Consumers want the experience to be more than efficient, clean and simple; they also want their experience to be elevated, for it to feel great. If they are going to invest their attention in this activity versus all of the other options competing for their time, then they want the experience to be simple, not simplistic, as well as engaging both intellectually and emotionally.

Individualize the learning.

The last mile has an audience of one. The last mile is personal and individual. Learning happens locally and individually even though it may be transmitted and shared globally and collectively. The learning consumer will expect all of their relevant data and information to be tracked, stored and targeted toward their own learning needs. They will expect the experience to be customized to an audience of one, even though they may be experiencing the learning in, and benefiting from the contributions of, a large and distributed group. They want the experience to be smart. For the system to get to know them, their strengths and weaknesses, their preferences and predilections. Eventually, they want the system to be a Digital Mentor on their shoulder, not only providing relevant targeted and timely feedback, but eventually anticipating their learning needs prior to them taking action. Learning that is gained two seconds prior to taking

action or making a choice may be worth a million times more than two seconds after.”

Leverage context in learning and application.

Our learning consumer’s last mile is a busy place. Learning is normally on the periphery of their day-to-day life and work. Family, friends, deadlines and deliverables at work, paychecks and preparing tonight’s supper for the kids have a tendency to be both important and urgent for people. Our learning design has to ‘grok’ this reality in the design choices we make. The consumer is overwhelmed with increasing amounts of information and choice. In a world of increasing complexity, the key to turning data and information into useful, timely and profound learning is context. The last mile of learning has to be contextually intelligent. It has to provide context-sensitive slices of information, challenge, reflections, suggestions, explorations and connections, depending on what the learner is ready for and most able to use within that specific context. Most importantly, it has to filter itself, so as not to accelerate your drowning in the information flows you are swimming in. We need a learning system’s equivalent of the Hippocratic oath where we swear to, at least, do no harm.

This standardization of large shipments into easily accessible parcels for other technologies, trucks, railways, etc., was not a small innovation or implementation and infrastructure challenge. To do the equivalent in the digital world, the mass transit learning experience needs to be designed with smart contextually specific ‘containers’ that include meta-data and the ability to connect with each other across the many permutations and combinations of contextually specific solutions.

In this digital world, an acceptance transit point leverages a ‘container’ that is made up of a contextually selected serving of data, a user

interface created and optimized for type of device, platform, time frame, as well as other considerations that will best optimize a specific user's learning within their current individual context. A part of that design can be locked down at the point of departure; while another portion of this experience will be assembled in transit through smart decisions built into the design of the system itself.

Should a learning experience provide the same look and feel and offer the same information when you have ten seconds to glance at your smart phone, as when you have ten minutes to explore on your desktop? Of course not. But that does not negate the value of a learning consumer willingly giving you ten seconds or ten minutes of their attention. In both situations, the requirement is that the contextual solution has to give the learner an optimal learning experience, reminder, information or challenge to add value to the learning journey. Easy? No. But it is the future direction of learning and it is already happening.

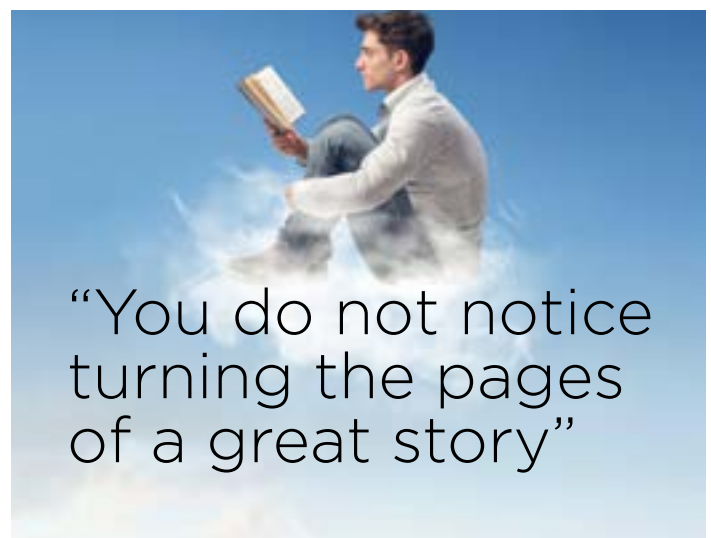
Every time, place and platform – Now!

Finally, learners need to be able to use it. To do things with it in the context of their world right now. 'Now' is when the learning consumer wants their learning to be accessible. Any time, any place, any platform, effortlessly and seamlessly within the context of what else is going on for them. The learning needs to be accessible to the learner when they need to interact with it. At times, this may mean at the point of application or just-in-time 'for application.' In today's learning culture, this has come to mean apply it to my job now in a just-in-time concrete application. This is one legitimate and powerful use of information and learning, but it is only one and should not overshadow many other broad and deep immediate uses of just-in-time learning. Systems might reach the learner at

just the right time when they are ready to reflect on it, or explore a new idea with it, or use it to broaden or deepen their ability to think about or around it, or imagine differently using it. Learners may not do anything concrete with it at all, but it might be exactly the right information at the right time to profoundly impact their growth and development.

The learning consumer expects technology to seamlessly fade into the background. They want the experience of learning, not the experience of technology. You do not notice turning the pages of a great story; the act happens automatically and subconsciously. The technology needs to be intuitive and ubiquitous, whether it is happening on one device or multiple devices or platforms. The learning needs to provide seamless context-appropriate options and views, migrating across the whole system, updating options between devices and providing intelligent solutions before, during and after action. This includes helping your increasingly smart 'ecosystem of smart things' to learn along with, and even ahead of you.

The learning consumer will determine what they want and through what device and platform they want to access it for any given context. They need for the design to allow them to intuitively and simply choose.





Is the design of the last mile easy?

No, it is not, but very few worthwhile endeavours are. It requires an intellectual, logical and efficient design approach; integrated with an emotional, human, intuitive esthetic. It requires incredible attention to every individual detail, and an equal ability to feel the flow of a learner's complex learning journey. The human designers of The Last Mile of Learning need to work seamlessly and as a team with the delivery experts in the details or the solution will be sub-optimal. You cannot build on top of technology, but only in consort with it.

Digital learning is ready to take its place and the current technology is no longer a barrier. It is up to those of us in design to set the foundation for a truly remarkable learning journey that rests impatiently at the corner of arts and science. This journey will reach millions of individuals with context-sensitive, intellectually challenging, emotionally engaging, individualized smart solutions spanning thousand of miles and crossing the final last one with power and sensitivity and nuance and human fragility. While a journey of a thousand miles begins with a first step, our digital learning journey now needs to focus on that one, complex and incredibly rich and rewarding, last mile.

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