



ccTLDs: a possible future...?

Maria Farrell



T'es où là, Papa?

"Alain? Alain?" Pierre asks softly, to check if his charge is just dozing lightly between courses or has fallen deeply asleep, "Êtes-vous réveillé?"

Response; a none too gentle snore.

Good thing Pierre had given the pills before lunch. Otherwise he'd have had to wake Alain to administer them and suffer his bad humour, or let him sleep but accept a payment penalty for non-compliance with the mutuelle's service level agreement. Feeling perhaps just a little too satisfied with his own good judgement, Pierre tucks a yellow honeycomb blanket round the old man's lap, tips back his armchair and sets it to a gentle massage pattern to prevent bedsores. Quick tidy around, then a fresh glass of water and Alain's screen put within reach, with today's Figaro ready for when he wakes. Alain's always grumpy in the afternoon.

"HomeHelp, log the progress report as all targets met, and refrigerate this plate for later. Open the window at 15.30 so the playground noise wakes him, otherwise he'll be up all night. And ping me asap when he stirs. Copy."

"Allgood. However, window."

"Explain?"

"Nantes local weather minus three degrees Celsius, Pierre."

"Ah, too cold to open the window. Then use a recording of playground noise. Dial volume up gradually from 15.15 and ping me when he wakes. Standby."

"Standby."

Pierre wipes his forehead and tries to imagine minus three degrees Celsius. Easier said than done in Ouagadougou. His apartment's shutters are all tightly drawn, but the fierce Harmattan winds blow in hot Saharan dust from hundreds of kilometres away. It's been mid-forties for weeks. Red dust coats every surface and gathers in drifts against walls and corners like snow does in the far, far north where he spends much of his working day. Funny how when it's hot you can't really imagine how cold feels, and presumably vice versa, he muses, and is about to switch to his next client when there's a knock on his office door.

"Papa?"

The twelfth-floor children have deputised Alice, his eldest and favourite daughter, to break the golden rule and disturb Pierre when he's working. He sets his sternest face and opens the door a crack. Half a dozen little faces peer up hopefully. No one's hurt or in danger, just bored. Local schools are all shut. He sends the neighbour's kids home and sets his own three to their devoirs, making them log in early to the French école primaire Afnic provides its citizens. The little ones complain but Alice encourages them and then glances quickly to him for approval. He nods and she's careful not to smile back and make her younger sisters jealous. She's growing up quickly. She's had to.

Pierre shuts the door and resumes work. On to his next clients, two wealthy sisters, only early sixties but also housebound – by choice it seems – in a coastal suburb north of Dakar. The sisters don't permit him to speak through any of their three HomeHelp units, using the service not for care and company but just for self-sufficiency and, Pierre suspects, to keep their financially-grasping nephews at bay. He runs through the usual checks, but the AI has everything in hand. Fridge and larder; stocked. House; clean and secure. Temperature and humidity; well within tolerances.

The older woman sits alone on an enormous white leather sofa, glued to her Nigerian soap opera and punching her controller repeatedly as she votes for the ingénue to marry the show's dastardly villain. Upstairs her sister sits at a mirror, face fully made-up and hair smoothed and slicked back in an old-fashioned style, cooing "soon, my love, soon" at her reflection. Pierre sighs and rolls the HH unit away, then has it change the water of a perfectly fresh flower vase. He tells himself to just be relieved these clients want none of the human contact they pay premium for.

"Alice, viens ici."

Pierre pulls sweets from his pocket for the younger two and beckons Alice into his office.

"Ferme les yeux."

He wipes his VR headpiece with a dust-stained handkerchief, then adjusts it for Alice's head.

The sisters' third HH unit is at the far edge of their estate where a high white wall opens up to a bougainvillea-draped arch with an iron gate onto the beach. The gate's rusted shut, of course, but Pierre operates the unit manually so it can peek through to the sea beyond. Alice's shoulders relax and her hands reach out in front of her, between the bars of a gate two thousand kilometres to the east. She inhales deeply; saltwater breeze with the gathered cool of an entire ocean. She can almost taste it. She relaxes into that pensive, open state humans have always entered at the sight of the boundless sea. A few minutes pass before she turns to him and he already knows what she will ask.

"Un jour peut-être, ma fille."

Maybe someday.

He wonders again if letting his daughter live somewhere easier, somewhere better, for just a few minutes at a time, is a gift or a burden.

The Go-Between

When Amana says she's just an interpreter, her Estonian employers – or “fellow distributed citizens” - roll their eyes and say she's so much more, that she's *worth* so much more to them than a mere linguist. It's true, though. Amana speaks Arabic, Spanish, French and, thanks to the Internet, proper American English. Impressive, but unremarkable for a third-generation stateless person in Tindouf, the woman-ruled camp-conurbation between Algeria and Western Sahara. What *is* unusual about Amana is that she also speaks several dialects of perfectly fluent machine.

Amana started off in microwork, paid fractions of a euro-cent per datum to populate language-sets that trained the early, rudimentary AIs – glorified statistics apps, really - in natural language processing. What does ‘dog’ mean? Easy. But “dog-days of summer”? AIs don't really do metaphor. It's easy for a human to parse, though, especially a human in one of the driest places on Earth, a place where dogs are feral scavengers not pampered pets.

Amana's numbers quickly showed she was special, one who fluidly code-switches between human and computing paradigms and interprets them to each other. She started out as low-cost labour delivering the digital piece-work sold as AI, but Amana soon became a whole new kind of worker, a human computing accelerant. They restructure frameworks and data on the fly, extracting and translating meaning so it's amenable to computation. Making the world safe for AI, basically. Amana's not so much the oil that keeps the machine running as the invisible elves who delight the cobbler each morning with his work all but done.

For a couple of years in her late teens, when she might have married and had kids, Amana tapped Spanish aid-workers for mobile data and trawled the digital souks of the grey-web, shamelessly sock-puppeting to boost her reputation as an “AI whisperer”. Self-praise is no praise, but the glowing reviews of scores of happy clients? Priceless. And if some of them are bots, well, who says bots can't be happy, too?

Amana's big break came at twenty-three, with an offer of “employment ++” from .EE, Estonia's old country code. The .EE guys saw early on that federated ID with premium add-ons like telemedicine and education could make e-citizenship more than just a marketing concept. Let's remake the social contract, they said, but this time for anyone, anywhere, as long as they're net contributors. One snag, though. The big platforms already owned the global AI talent pipeline. And immigration lockdown – the EU's true climate change policy, cynics argued – didn't help. So those plucky Baltic pioneers got creative, figured that talent flourishing in the toughest conditions on the planet, now that's talent worth seeking out. Also; a helluva lot cheaper.

.EE's offer, which Amana took straight to her camp's work council, was this; work for less than you'll make on the open market but grow your value through our credentialed training, pay us some tax, send your kids to our virtual school and work your way through our citizenship modules to, maybe-some-day, actual IRL residency. IRL, the older women on council asked? In Real Life, Amana explained. The details of the process were tactically vague, not quite promising that in fifteen years Amana might just ride the e-citizenship escalator all the way to Tallinn. The older women smiled wryly at this.

OK that's a mirage and we all know what a mirage looks like, Amana conceded, but if I do well, I'll pull some camp kids up the training and employment ladder behind me, convince .EE to rent an LEO satellite just for Tindouf, and then everyone can keep in touch with their lost families on the other side of the Wall.

Sage nods all around.

Amana eagerly agreed to the council's secret condition; she would use anything she could learn or purloin from the Estonians to help Tindouf deal with its own influx of undocumented and extremely IRL climate refugees. And that, for about fifteen years until a surprisingly cool October morning in 2039, was that.

So why is Amana, now pretty much the world's top interpreter, reading today's message from .EE over and over, trembling and repeatedly blinking as she tries to figure out what it means?

After his own lunch, Pierre lies down in the sitting room. A short snooze and then he'll do a lightning round of admin. One task he's dreading; Afnic needs qualitative reporting on customer satisfaction. Pierre has heard that the French and Belgian mutuelles are haggling over whether to renew their contracts with Afnic. The competition – the .JP consortium's fully autonomous units - will soon be cheaper to run than the human-hybrid ones Pierre and hundreds of others manage. Even on sub-Saharan wages. Afnic has all the quantitative data - higher retention, reduced hospital visits, etc. for clients with human-controlled HomeHelp units. But even though loneliness is now a WHO-classified disease, it's the anecdotal evidence that changes hearts and minds. Everyone loves a story, but that's easier said than done when your current clients are either silent misanthropes or grumpy ones. So first, a quick catnap. Just for a moment. Just to rest his eyes. . .

A shriek followed by a peel of laughter jerks him awake. 17.00 and he's slept right through the afternoon. Alain will be awake and alone, or worse, fast asleep and going to be up all night again. And the older Senegalese sister will gleefully report Pierre's neglect. He rushes into his office, preparing abject apologies, to find the situation is even worse than he'd feared. Alice sitting on the floor with a headset on, and moving her hands carefully in front of her. The twins side by side, both crammed into a headset, clapping and singing some song they learnt at maternelle, when they still went.

Pierre checks the screen display for flashing client complaints, or perhaps even a crash-summons to a disciplinary. No messages. Just Alain playing chequers with his HH unit, concentrating harder than Pierre has ever seen. Alain moves a piece and sits back, satisfied. Alice waggles her finger and Alain makes an exasperated 'now, what?' shrug at the HH, but stares intently at the board to see what it's about to do. In Dakar, the sisters are side by side, squashed into the middle of their enormous sofa, trying and failing to clap in time to the twins' manic song, sung faster and faster until with another shriek – this time from Senegal – it all collapses in a frenzy of laughter and mischievous recrimination. For a moment there's quiet, and Pierre's youngest daughters look at him in mild alarm. Then the older sisters start up a new song, the twins turn away and nod in time till they can join in.

Amana blinks repeatedly. “Focus, focus!” But fragments of the .EE message keep swimming out in front of the rest.

“urgency”

“your unique skill-set”

“hit the ground running”

“Tuesday”

She squints at the text and commands it to resolve.

“Based partly on your process and insights, which we have taken the liberty of patenting, we’ve evolved a method to address a whole new class of problems”

Military? she wonders. Must be big. Realtime state-level economic-planning? That would mean ... Her concentration pops, with a final, bossy interjection of “utmost confidentiality”.

Hands shaking too much to tightly secure her headscarf against the swirling dust outside, Amana takes the message straight to the administrative centre in Rabouni camp.

Council is in deep session, discussing whether the trade and movement deal with Za’atari camp in Jordan should admit orphaned refugee zones like South Florida and Louisiana. It’s the age-old question; stay doing what you do well, or change and risk everything? Amana’s older cousin and, let’s be honest, her real boss, Fatimatu, deputy council leader, offers an ear before quickly dismissing her.

“Their urgency is not our problem. Come this evening and tell me what’s new with the Lost Boys.”

Amana can duck and dive, but she’s not going to argue with true authority. She flags down a shuttle to Laayoune camp where newcomers now far outnumber the original Sawrawi refugees. The old joke that the Sahara is the only thing in the region that’s growing is, well, unkind but not untrue. Laayoune is now dominated by several thousand boys and men who’ve fled drought, hunger, resource conflict, village feuds, and probably a little recreational goat-stealing, and are settling down to doing what bored young guys have done since the dawn of time; go looking for trouble and if they can’t find any, make some.

The women in charge of the Tindouf camps have not spent decades running things while their men were away fighting, to just hand it over to some bored young punks. Plus, some of these kids are real sweethearts. Plus, even when they’re not, they could be anyone’s wayward son, anyone’s lost little brother.

A hot and bumpy hour and a half later, Amana walks into an old school building that serves as both home and workshop for sixty boys and young men. Some can read and write well and are typing on ancient chromebooks, but most can’t and mill around in Brownian motion, barely avoiding collisions as they talk into headsets and gesture insistently with their hands.

From Fatimatu, ‘Tell me what’s new with the Lost Boys’ means ‘Tell me your system is

finally working'. Truth is, though, the Lost Boys is more of an ecosystem than a system, and it's outgrowing Layoune's resources and Amana's ability to keep the lid on all that energy. The Lost Boys is a strictly off-the-books operation, bootstrapping .EE's federated ID platform to give thousands of young guys not just digital identities, but something useful to do. And while a couple of Amana's Estonian colleagues are conspicuously helpful when she asks for stuff she doesn't need for her own job, .EE 'official' are most definitely not in the loop. It's an unmarked two-way street, though. Amana's fed back in some of the young guys' use cases and they've been surprisingly successful.

Sometimes in endless work meetings, she even finds herself channelling them. Amana's natural instinct is to move between people, see what they have in common, pick out what's possible. But these kids? They want what they want and they push for it, hard, because the one thing they know is that rescue isn't coming. Being around these kids has changed how she works, maybe even, just a little, who she is.

She checks in with Moustafa first. Actually, he spots her instantly and strides over, surrounded by his permanent cloud of followers. Moustafa's Cluster project works on what he calls an "aggressive nonproblem" – how, when a surname is a death sentence in the wrong hands, many young, apparently stateless men cluster behind a tiny number of generic names and birthdates, like hundreds of networks stacked up behind a single IPv4 address, back in the day. Security through obscurity. It's a great way to survive the trek north, but not so much when you want to get on with the rest of your life, maybe even build something.

Right away Moustafa starts to pitch her. He got most of his education from TED talks and ancient MRA reddit posts and, well, it shows.

"ID is not a one-off event, like a passport," Moustafa says, like he's continuing a conversation interrupted just moments ago, "Identity is not a one-time lottery decided at birth, with just a few winners..."

"Well, actually," Amana smiles.

"It's just information. Attributes. And some attributes have user privileges. Education. Life expectancy. This makes no sense. We need to match value to where it counts. Make our privileges match our attributes and not the piece of rock we got born on."

"Survival of the fittest?" Amana asks, and several of Moustafa's acolytes frown at her interruption and step forward.

"Of the best," Moustafa says, smiling as he gestures them to stand down.

Amana listens to the rest of the pitch, but the only new feature is Moustafa's urgency, the sense that his impatience will bubble over into outright anger at any more obstacles. He's ready. More than ready. And he's got potential buyers lined up in a string of independent enclaves, post-Soviet basket-cases and free-man archipelagos in the north Atlantic. Real people. Real money.

The only problem is it's all built on .EE's platform. If they find out it's been pirated and

sold for scrap, it's game over for Amana's job, the satellite, and all the money, training and opportunities that flow from it. Amana explains this for the twentieth time and tells Moustafa to be patient and quiet, and for goodness sake don't go live.

"What have they ever done for us?" Moustafa asks.

His groupies answer "Nothing, man, nothing", like it's a ritual incantation.

"Nothing," Moustafa echoes, "And that is exactly what we owe to them."

Amana bows her head. A gesture of submission will satisfy Moustafa for now, make him feel big and his followers think he's in control. But it's only a matter of time before he pulls the pin.

It's an ecosystem, not a system, Amana tells herself as she moves to the other side of the workshop, to Amr's Islands group. Amr's busy, working with a small knot of guys clustered around a hesco-mounted display, so Amana looks over the shoulders of his coders and makes suggestions on semantically linking some wildly differing data-sets of, shall we say, dubious provenance. She's trying to take a closer look at something ... anomalous, some unhashed biometric data where it has no business being, when Amr comes over, shaking his head impatiently at the guy she's talking to. Amr's unusually flustered and asks sharply if Amana's been offered hospitality. She shakes her head and he gestures her to follow him to a quiet corner where she drinks tea-equivalent as he updates her on the project.

Amr talks passionately and fluently about the need to link up islands of data and, as always, he moves quickly on to islands of people, to his sisters, trapped in their besieged hometown. Amara asks if he's heard any news. He shakes his head.

"This is supposed to help," Amr says, gesturing to guys hunched over chromebooks or talking into basic headsets. "But it makes it harder. We work to move data around, let it flow like water ..."

"Water does not flow easily, here," Amana observes.

"And the better the data flows the more it defines us and blocks us in. I try, but ... my family is amputated. How will any of this fix that?"

Amana remains silent. No words in any language she knows can heal this loss. Only silence can honour it.

Amr straightens up, recovering himself faster than she expected.

"But this is what is given to us to do," he slaps his knees and forces a brief smile, "So let's do it."

Later, at Fatimatu's house, Amana talks about .EE's sudden offer for her to go to Estonia and work directly for them.

"I thought this job was an escalator. Up and out of here. That's what they promised."

"But you never believed it would happen," Fatimatu laughs, "Neither did we."

“And it’s been fifteen years. My life is here, my family with you, here in Tindouf. It’s not a game, with levels to clear to keep moving up. But I am also over there, and they are good to me. Maybe I owe them something more than the contract says. And we could do so much more here if we had more ... But anyway, when they find out ...”

Amana abruptly stops. She’s not ready to tell Fatimatu about Moustafa and his threat to go public with the pirated version of .EE’s platform. She’s certainly not ready to confess her even darker fear. Instead, she asks her older cousin if the council decided to accept the abandoned American flood-territories into the partnership.

Fatimatu shushes her youngest children out of the room.

“What do you think, Amana? Would you let these rag-tag ex-Americans join us, even in name only?”

“Sure. As long as they all stay right where they are.”

They both chuckle at the irony.

“But seriously,” Amana says, “They’re a financial drain. Otherwise the union would have kept them. The people are barely educated and all they have to export is their doomsday cult. We don’t need terrorists coming here. We need links to high-class countries to help us get legal recognition and trade.

Fatimatu suddenly looks crumpled and tired.

“I’m sorry, but you know it’s true,” Amana says less harshly.

“That’s certainly how many see it,” Fatimatu says.

“... but it’s exactly that kind of thinking that gave us these problems,” Amana finishes the sentence. They’ve had this conversation many times before. “So, did you win?”

“We’ll add South Florida to the daisy-chain,” Fatimatu says, “Louisiana will have to wait.”

“You need to think of a better name than ‘daisy chain’. Confederation or alliance or something more official.”

Fatimatu shrugs and smiles.

“Why? The old names never served us.”

This, too, is an old argument. Amana begins gathering her things to go.

“Not so fast,” Fatimatu says, but gently, “I hear there is a problem with one of your Lost Boys?”

Amana sighs and sits down again, then comes clean. Mostly.

“The whole relationship with .EE is at risk?” Fatimatu asks, “Even the children’s education?”

“All of it.”

They both look at Fatimatu's eldest daughter sitting quietly on a rug, pretending not to listen.

"Then the way is clear," Fatimatu presses, "You will never be more valuable to them than at this moment."

Amana rubs her palms against her robe.

"You want me to go?"

"We need you to."

Suddenly, Amana wants to smash something. She smothers the feeling, as she always does, and looks at Fatimatu's eldest daughter. The girl stares back, almost insolently.

"First you took me away to this place, away from ... everyone," Amana says, for once not hiding her bitterness.

"It was our chance to survive. You know that," Fatimatu says, "Our parents' sacrifice was far greater, when they told us to go."

Easy for Fatimatu to say, Amana thinks. Her mother is still alive and in occasional contact.

"And now you send me away again?" Amana asks, and points at Fatimatu's daughter, "For her?"

"For her future, yes. So she can learn."

Fatimatu beckons her daughter to stand by her. The girl quickly obeys.

"She will follow you onto council, not me?" Amana asks.

"She is my daughter."

And there it is. Finally. Out in the open.

All Amana's skill for ducking and diving, for being the go-between that keeps the two sides from understanding each other well enough to know they are actually at war – whoever the two sides are; Tindouf and Tallinn, AI and human, the saved and the damned – it all comes down to nothing. Fatimatu, the almost-sister who brought her to safety, once, will throw her away to save her own children. Amana is truly alone. Knowing this gives a cold clarity.

"Then you should know, we have another problem."

"What is it?"

"One of my Lost Boys, Amr, who does the data-islands project? He is not linking our data. He is destroying it."

"Why would he do this?"

“Some of the aid-providers share or sell on our biometrics and the northern states use it to deny asylum and send us back.”

“Not here in Tindouf. We put a stop to that.”

“That’s no help to others. The more I think about what Amr is doing, the less I disagree with it.”

“Amana, we build new ways to do things. We don’t destroy them. We can’t become known for crime and ...”

“It’s an ecosystem, not a system,” Amana said, a little cruelly, “And why should we support a system that keeps us on the outside, no matter what we do?”

Fatimatu involuntarily pulled her daughter closer.

“Please, Amana, you must control your Lost Boys. Their activities threaten all of us.”

“And what about the lost girls?” Amana says, not entirely sure who she means. The words have spilled out as she waits for their meaning to arrive.

“Who?” Fatimatu asks impatiently.

“What about me?”

Fatimatu shrugs.

“The world is full of lost girls, Amana.”

Amana is quiet for a long moment. Then she says “It’s time I talked properly to .EE, Fatimatu. It’s time I made a new deal.”

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About the author

Maria Farrell is an Irish writer and speaker about technology and the future.



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Belliardstraat 20 (6th floor)

1040 Brussels, Belgium

Tel: +32 2 627 5550



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