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The Engineering City Journal

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The purpose of the Journal is to disseminate knowledge, experience, and best practice in engineering & manufacturing.
The articles are written by practicing professionals in the Engineering City (EC). They cover issues relevant to their projects, operations, and organizations.
The articles address the challenges of the time. As such, the Journal is also a chronicle of the evolution of the EC, its companies, and its individuals.
It is the aim of the Journal to advance the engineering & manufacturing practice, to enrich the engineering & manufacturing community, and to contribute to the worldwide discourse in engineering & manufacturing.

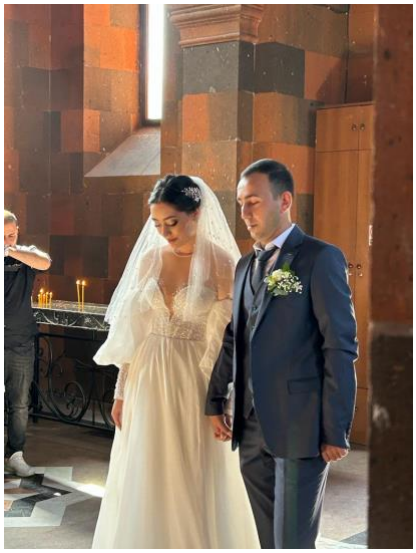
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Community Corner

. A New Engineering Couple in the Engineering City Community

by Rama, EA



As they entered the church in reverence and humbleness.

Harutyun Hambarcumyan and Nelli Harutyunyan – both from YEA Engineering – got married over this weekend.

They were in the original team that worked on the CubeSat student project starting from their second year. They were among the first students to graduate from the Bazovaya Kafedra with the specialization in RF Devices & Systems. Subsequently, they joined the "YEA Engineering" team.

We were watching this couple evolve for a long time in anticipation for this to happen. And it happened.

. NI becomes Emerson

by Rama, EA

NI is now the Test & Measurement Segment within Emerson.

As such, NI ceases to be an independent company.

When Dr. Truchard endorsed this acquisition, I did not fully understand his wisdom at the time.

But now, I think, I do. The following is my speculation.

By supporting this acquisition (as opposed to fighting it), he literally placed NI within Emerson, a company 10 times the size of NI. As though it was not that Emerson acquired NI, rather, it was NI that was placed within Emerson.

By doing so, Dr. T. found a new home for NI – a bigger home, a safer home. By doing so, he secured the life of NI and its people into the future. By doing so he secured the survival of NI.

It had become obvious in the last few years that NI with its relatively small size and with its internal structure and operation was no longer able to keep up with growth and the new challenges. The market challenges were getting bigger, the competitive pressures were getting heavier, and the macro threats were becoming more frequent.

He did not see a danger in this acquisition as Emerson did not compete with NI in the marketplace. Their product line is completely different, and their user-base completely separated. In the contrary, NI will now play a leadership role within Emerson as it will now lead it into the test & measurement market. And NI now will have access to a very large pool of finances, and its operation will gain the efficiencies of a huge corporation.

He literally secured the future of NI's people and technologies!!!

And what was NI? NI was a company. And what is a company? A company, like anything else, is a combination of two categories – 1. the content (its people and technologies), 2. and the form (the legal entity). Like in anything else, the driving force is the content, and the form is just the shell that houses the content. If the content comes into conflict with its shell, when the content outgrows its shell, the shell should be replaced so that the content keeps on growing and developing. Because it is the content that must be safeguarded, not the form. The old form (the shell) must be discarded for another form, a newer form – a form that can secure the further growth and progress of the content. Progress is eternal, the forms are temporary.

In think that this is what has happened.

But now there are two processes that must be carefully managed:

1. Will Emerson succeed in turning NI's Test & Measurement segment into a positive business for Emerson? In other words, will they succeed in a positive integration of NI into the bigger Emerson family in a way that NI's people and technologies will further thrive? In other words, will they succeed in making this acquisition a positive acquisition? In other words, will they create the conditions for NI to further create and innovate within the bigger Emerson culture?
2. And the other process is on NI. Will NI be able to take full advantage of being housed in this big Emerson and thrive? Will the NI people succeed in keeping and further developing their unique culture within the bigger culture of Emerson? Or will they disappear like a dying star? This will be responsibility of NI's people – to thrive as NI within Emerson by taking full advantage of Emerson and stay NI at the same time.

All indications show that Emerson wants to keep the identity of NI strong within Emerson. This is very good! Why is this good? Because there are two types of acquisitions – one with the purpose to kill and annihilate the acquired company and get rid of a competitor from the marketplace (this could have been the case if Keysite had acquired NI), the second, in the contrary, with the purpose of leveraging the people and technologies of the acquired company to get stronger in new applications and industries. It is the second type that we have in the case with Emerson and NI.

But not all acquisitions and integrations end up successful even if the intentions are good on both sides. Like anything else, there are no guarantees. Acquisitions and integrations must be managed carefully on both sides. There will both positive forces and negative forces on both sides that will be at play here. These forces are objective forces that must be acknowledged and managed by everybody. It will be of importance to regocnize these forces and identify with the positive ones. Otherwise, the process may stall (буксовать). We don't have much knowledge here. Books and articles must be read about acquisitions and integration of companies – especially, about the potential growth opportunities and the possible pitfalls and failures.

NI people will be going through interesting times filled with new potentialities!

For NI Yerevan the question will be whether they can grow ten times in these new potentialities - from 150 people to 1500 people?

Musings Corner

. Engineering Thought Leadership – from Doing to Publishing

by Rama, EA

Allow me this musing.

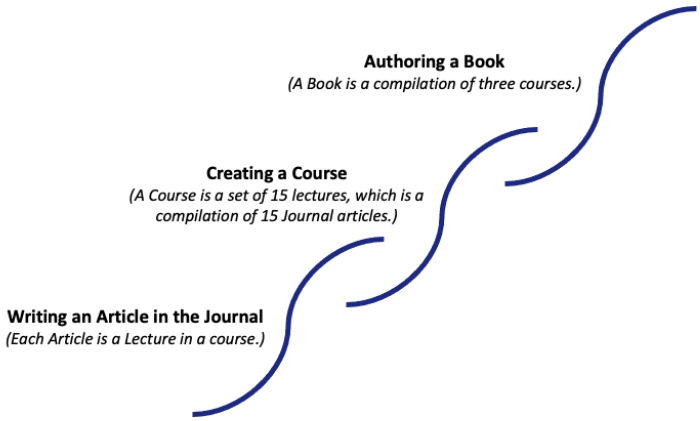
Everyone must teach. This is an axiom that is encapsulated in the saying that each professional must also be a pedagogue. To teach, you need to have created a course. A course constitutes of lectures. To create a lecture you must create slides, and to create slides you must write a text for each slide.

But each written lecture is nothing but an article in the *Journal*, and the course is nothing but a compilation of *Journal* articles. Here we can do one more move – authoring a book. What is a book if not a compilation of lectures.

In numbers:

- One article is a lecture,
- 15 articles are 15 lectures which constitute one course,
- 3 courses put together constitute a book.

And you get this set of three S-Curves.



Tomorrow we will have 2000 engineers working in the EC. 2000 Engineers should translate to 2000 books. If the EC generates 2000 books, then the EC will have created a world-class publishing house, and we will have contributed to the worldwide discourse in engineering & manufacturing.

From the Purpose of the Journal:

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So, in this picture, the purpose of what we do is no longer to just create engineering jobs, is no longer to just do engineering, but we are already seeing a bigger potentiality, a North Star – to become one of the global centers for engineering thought leadership.



The North Star – Global Engineering Thought Leadership

In this logic, the purpose becomes writing books, and engineering practice becomes just the means to write them. In other words, we practice engineering just to collect materials to write books - not vice versa. In other words, writing books becomes the purpose of doing engineering, not a by-product of doing engineering.

Let's go over this one more time. With such an approach we will have translated our knowledge and practice into lectures (our lectures will be rich with real-life projects), with these lectures we will have educated our own engineers, and through the books we will have taken a thought-leadership position in the world. Every little thing that we do, every project, every reading, every event could have this purpose in mind. And to reach this position we could divide the task into three – "doing engineering" and "writing", "writing" and "teaching", "teaching" and "publishing".

So, when you think about writing an article, look to its potentiality of it becoming a lecture, then it becoming a course, then it becoming a book, then turning the EC into a Publishing House, then turning Yerevan into a global thought-leadership position.



We sure have the practical part – this is what we do every day. We create products, technologies, and solutions. Our engineering practice is very rich, deep, and advanced. With teaching, we will create the theoretical part:

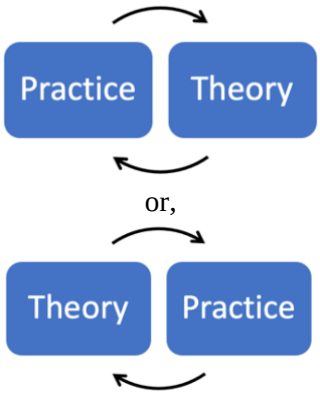


When we give the course to the students, we are really teaching them how to move from theory to practice:



And with every new practice (a new product, a new solution, a new technology) we have the potentiality to create a new course, meaning to bring in or confirm a new theory, and so on.

And we get to what is called the scientific method:



And during this process we will have created products, technologies, and solutions on one hand, and written books on the other. And in the process, we will be on our way to a global thought-leadership position and fulfill our purpose of contributing to the worldwide discourse in engineering & manufacturing.

And this would be a very productive and meaningful life.

Announcement Corner

. Engineering Association's General Meeting set for October 23

The EA General Meeting has been set for October 23. During the meeting, a five-year report will be presented and a new board be elected.

. Armenia Engineering Week set for November 24 – 26

The Engineering Week has been set for November 24 – 26. Follow the latest news on www.engineeringweek.am.

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