

Tech Deep

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2019 September



BEST HEALTH AND PRODUCTIVITY AWARD 2019

Embla Health and
Well-Being Program



UX Review for noobs

How IT industry
effect to climate
change



Tech



Science



IoT

EDITORIAL

Chamil Kandamby

“Pursue the things you love doing, and then do them so well that people can’t take their eyes off of you.” – Maya Angelou

The success of a company undoubtedly depends on the health, well-being and happiness of its employees. Embla Software Innovation has won the gold award for “Corporate Health & Productivity” at Sri Lanka Corporate Health and Productivity Awards 2019. In 2018, “Embla Happiness” was initiated to formalize all existing well-being events into one Embla well-being policy. Which took tremendous effort of commitment to bring this award within one year. This great success is achieved with the goal of making employees ‘fit’ in physical, mental and social factors.



Embla “TechDeep Magazine” third edition is focus more on happiness of employees. It is what we have practised to make the working environment is the best place of your life. As the concept of **“Make your workplace your favourite so you’ll never work a day in your life”**. To support that, we have included articles such as “Embla happiness” and “How climate change effect to IT industry”, ‘UX reviews for noobs’ and technical articles such as Complete Automation With Serverless and Using QA Metrics throughout the QA Life
Written by embla staff.

We greatly appreciate the support we had from all our colleagues at Embla in order to make this magazine a success despite of their busy schedules. All articles in TechDeep is written by our staff. The magazine will be hosted on our website and can be collected at our office as a printable version. If you wish to share your feedback, we welcome your thoughts for upcoming editions of TechDeep magazine



Nirmal Lanka



Sasini De Silva



Damith
Amarasena



Upeksha
Ranawaka

CEO'S NOTE

Chandimal Wickramaratne

Ten years ago, when Embla began operations, one of the most important aspects the management sought to pay attention was to the office environment and the health of the employees.

Of course, these values are derived from the Norwegian way of life. At that time, our CEO, Stein wanted to make sure we provide the best for our employees, so they are happy and productive. From that day onwards, health and well-being were a part of our core values. Being empowered, our employees contributed towards making productivity and well-being a priority and a permanent culture at Embla, ultimately a historic milestone in Sri Lanka. Winning the Gold Award at the Corporate Health & Productivity Awards is no small feat. Personally, I am proud of the Embla team.



Why do we care about health and productivity so much? We have great concern for the wellbeing of our employees. There are so many companies still out there, tiring out their employees due to various reasons. Most cases are due to no proper process in place to take care of feedback and action plans. In our line of work, product development is a continuous process. Day in day out, our teams have to deliver working software to our partners. We had to make sure our employees don't burn out from the first release of the product. Embla Extended Process is the key which achieves that success.

On the other hand, our partners need to get value. You can easily see it from the way Peter (Microbuild/PO & Developer) commented about how Embla is delivering values to our customers. Of course, we will not stop here. Again, this is just a milestone of where we want to go. There is so much we can do in terms of health, wellbeing and productivity.

Our vision is to take Embla to the global level. This can only be achieved together, not alone. So join us in making that dream a reality.

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serverless



Complete Automation
With Serverless

COMPLETE AUTOMATION WITH SERVERLESS / CLOUDFORMATION



Dasith Kuruppu

During the early days of web development, a website was **deployed** by purchasing a server or access to a server by using a hosting provider, and in some cases the hosting servers were in-house.

Afterwards, you would manually have to configure and install a bunch of utilities / software to allow the server to run and host your website or application. If you needed 3 similar server environments (eg; development, testing and production), you would have to repeat the process. Then comes a point when you realize you need to scale your servers as the traffic gets higher and higher.

Initially you just scale vertically, hoping it would be enough, and when you reach the vertical scaling limits, you are **forced** into horizontal scaling. This is an entirely different beast altogether, which usually ends up with major application reworks, hiring infrastructure engineers, and a lot more complex configurations which ultimately ends up with you making an overprovision of resources / servers just to be on the safe side (this is a good thing).

Finally, when you have enough capacity and resources provisioned to accommodate more than enough traffic, you realize during certain times of the year that there is barely any traffic...

and your provisioned resources stay idle while you pay the bills. Ever considered this to be a problem? Or have you ever considered if there was an easier/better way to tackle this problem?

Well if you have, **fortunately**, now the industry has now evolved into a state where scalability, complexity, maintainability and cost of scaling has been considered as primary factors when designing a web application more often in the initial stages itself rather than later. You can easily achieve this with the many services offered by the popular cloud providers (AWS, Azure, Google Cloud, Alibaba Cloud).

They have turned most of their in-house software and open source software to services with added value which scale **indefinitely** with usage. You may now have a question “What does this actually mean?”

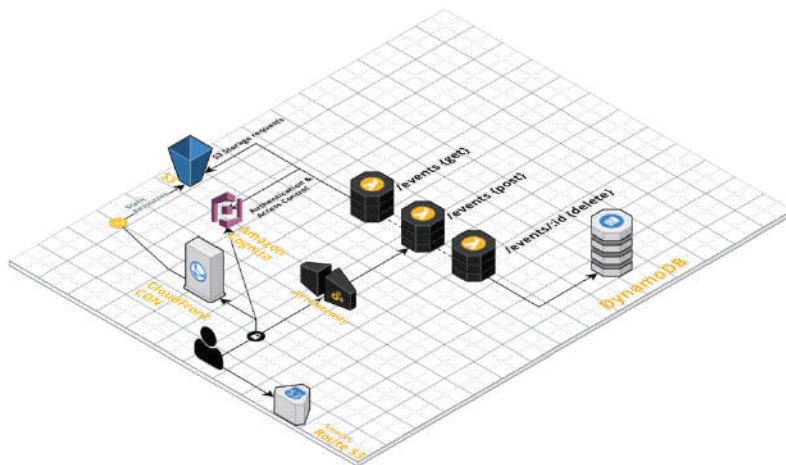
Well it means most of the complexity of configuration and scaling has been abstracted over by cloud providers in a much elegant and cost efficient way such that resource provisioning, scaling and automation has become much easier and simpler to set up. Most cloud providers now provide ways to automate everything using IaaS (Infrastructure as a Service eg: Cloud formation templates) coupled with DaaS (Database as a Service eg: DocumentDB & DynamoDB) & FaaS (Function as a Service eg: Lambda). With these services spawning servers, databases, VPCs, gateways could be done within a few seconds.

So the blueprint for any architecture you can think of for your application could be written on to a template file like the one below which is using a Serverless template (Serverless -<https://serverless.com/> mentioned here is a framework that allows us to provide common template files to provision resources, the

Serverless framework normalizes this template between the popular cloud providers allowing us to provision infrastructure/resources on any of them using a common template file).

So for example the following yml template below describes the following architecture.

```
1 service: aws-nodejs
2 provider:
3   name: aws
4   runtime: nodejs8.10
5   stage: default
6   iamRoleStatements:
7     - Effect: Allow
8     Action:
9       - dynamodb:DescribeTable
10      - dynamodb:Query
11      - dynamodb:Scan
12      - dynamodb:GetItem
13      - dynamodb:PutItem
14      - dynamodb:UpdateItem
15      - dynamodb>DeleteItem
16     Resource:
17       Fn::Join:
18         - ""
19         - - "arn:aws:dynamodb:*:*:table/"
20           - Ref: EventsGqlDynamoDbTable
21 functions:
22   getEvents:
23     handler: handler.queryEvents
24     events:
25       - http: GET events
26     environment:
27       TABLE_NAME: ${self:custom.tableName}
28   createEvents:
29     handler: handler.createEvents
30     events:
31       - http: POST events
32     environment:
33       TABLE_NAME: ${self:custom.tableName}
34   deleteEvents:
35     handler: handler.deleteEvents
36     events:
37       - http: DELETE events/{id}
38     environment:
39       TABLE_NAME: ${self:custom.tableName}
40 resources:
41   - ${file(resources/dynamodb.yml)}
42   - ${file(resources/s3-bucket.yml)}
43   - ${file(resources/cognito-user-pool.yml)}
44   - ${file(resources/cognito-identity-pool.yml)}
```



This means that any infrastructure, service or resource that could possibly be used in the project/application is just held in one single file, with the ability to replicate the architecture within seconds on any cloud provider (with the exception of vendor specific services).

This means you would never have to worry about hardware issues, OS issues (with the use of lambda functions), network issues or configuration and service availability issues. As all these become a responsibility of the cloud provider and you could set your sole focus on the application. By using serverless templates your entire application including the infrastructure becomes portable across any cloud vendor. This also allows you to replicate the same environment any number of times allowing you to reproduce identical test and production environments quite easily.

You may now have a question as to how this would help us achieve 'complete automation'. Well normally any application uses some sort of automation, it could be the build process, the testing or deployment process or all the mentioned processes. What most of them lack is the automation of the creation of resources/infrastructure itself, but with Serverless templates this becomes quite easy to achieve. Where you could have a scalable infrastructure created on demand, with the ability to port them across any cloud provider, which is quite a powerful feat to have on an application. You can bootstrap your applications off of the repository from <https://github.com/DasithKuruppu/serverlessGraphQL> however if you prefer a GraphQL API, or if you prefer your own RESTful API, you could create one by installing serverless and using the following command if you prefer a NodeJS run-time :

```
serverless create --template aws-nodejs
```

Several other templates are also available supporting many different runtimes. So, the next time you start a project, you may want to consider this kind of approach to automation which would massively benefit you in both the long and short run!



Journey to Service Excellence



Eranga Rajapaksha

EEPM... JOURNEY TO SERVICE EXCELLENCE

We are a software services outsourcing company, providing software solutions for the Scandinavian market since 2009. Where most of our clients are independent software vendors. In order to build long term relationships with our customers, we continuously strive to push the boundaries in delivering high quality products and services.

Problems Confronted

As most outsourcing companies, Embla faced many challenges to keep the customers happy. In 2016, Embla had six software development projects managed by 40 developers,

but failed to retain some projects due to various reasons, mainly been clients moving to other countries. Some obvious reasons were solution orientation, cost, location, specialization and communication. However, after assessing the situation, it came to light that focus were more on technical aspects rather adding value to the customer.

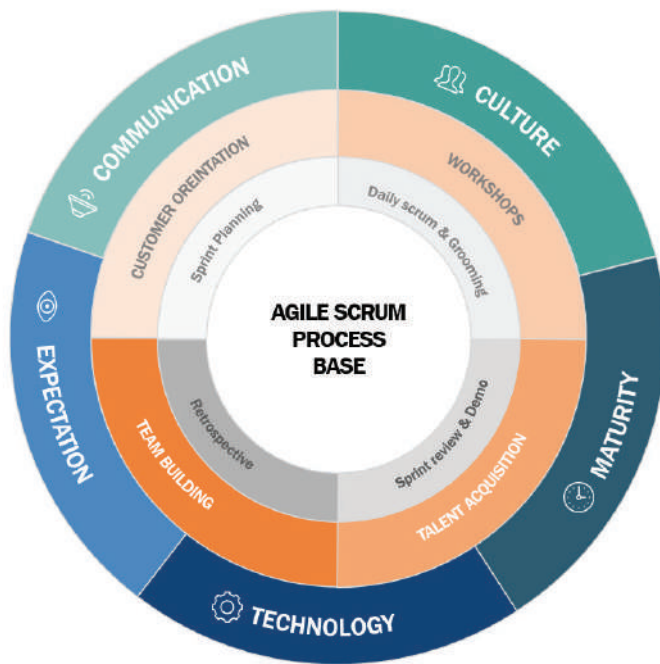
What We Did Differently

Then, we identified different areas that need improvement in order to ensure customer expectations are met. This exercise resulted in the model, the **Embla Extended Process Matrix (EEPM)**. The EEPM model encompass five key elements effecting an outsourcing service.

i.e. **Expectation, Communication, Culture, Maturity and Technology.**

This model was integrated into all internal processes across the organization, starting from development, HR, customer orientation, client acquisition, workshops and team building events.

Then, it was rebranded as “Journey to Service Excellence”.



EEPM Model

The Journey Began

We started adding few initiatives with the aim of enhancing each component and applied them into different phases of the internal process.

In outsourcing, a key aspect is the **customer expectation**. We need to understand the end client as well as the product owner's requirements and expectation. Product owner trainings, accurate acceptance criteria, team and client workshops and product owner ratings and feedbacks are some of the initiatives we have done in order to achieve customer expectation. Another key aspect is **communication**. Teams are encouraged to update product owners about the status of the sprint at least twice during the sprint. Requirements reverification, communication even through texting, pre-demonstrations, tech and lightning talks are also encouraged to enhance communication.

Cultural differences play a significant role in project failures. It is natural that development teams trying their best to deliver what customers expect. This mindset tends the developers to accept any task even if it seems impossible to do, and also they think it is impolite to say "no".

To avoid cultural gap, we have integrated few steps like HR inductions on how to give options to clients without saying no, team and PO workshops outside the office in order to build collaboration and teams were educated to maintain prior meeting schedules. Then, building **mature teams** who work independently was a challenge.

Team building events and workshops facilitated good understanding and trust between cross cultural teams, where they work together to bring new ideas and solutions. Finally, development services need to have good **technical skills** in order to deliver the requirements to the customers. At Embla, we have a group of talented geeks who can face any technical challenge to deliver the best to our customers.

Monitoring is Essential

Having all the processes and procedures in place doesn't guarantee that it will work as we expect. Hence, we started monitoring our new process. To monitor the progress, a process compliance matrix were introduced to see how teams schedule meetings, do their demonstrations, ratings and feedback they have got from product owner and how teams practically implement action points.

Yes!!! It Worked!!!

After implementation of EEPM model, we saw a drastic improvement in relationship within teams and product owner. Teams are more energized as they always felt the value of what they have done. Teams were able to meet the desired customer expectation. Good ratings and feedback were received from the client. Customers were delighted and rewarded their teams many times during the year. Most importantly, customer reference has brought us new projects, whilst many teams grew twice in size. Even in the Sri Lankan IT industry, we kept our name 'Embla' forefront being awarded "**Best Innovation in Internal Process**" in SLASSCOM Innovation Summit 2018.

The Journey Never Ends

Our journey never ends. We shared our expertise with the industry. "**Agile to Fragile**" was a successful industry event to share our findings. Apart from that we visited N'able (pvt) Ltd to guide them to be success in the agile world. Going forward we will integrate security aspects to our EEPM model and create an environment where security is second nature. Further we will continue to share our experience with the industry so that Sri Lanka is ready for the global expectation.



Using QA Metrics
throughout the QA Life
cycle



Hiran
Samarawickrama

USING QA METRICS THROUGHOUT THE QA LIFE CYCLE

What are QA Metrics?

What do you understand by QA Metrics? They simply help us to measure the quality and make sure we meet our quality guidelines. Measuring quality helps us to make the right decisions at right times and identify actionable trends. Metrics play an important role in tracking the progress and quality.

There are different aspects of quality that can be measured through the QA metrics. One is the product quality. We can have an overall idea of where our products stand in terms of quality and what immediate measures we can take to improve the quality of a product.

Another factor we can measure is the team efficiency. It helps identify where the team's time and budget are being used ineffectively and optimize accordingly.

Metrics can be categorized as below.

Process Metrics : These can be used to improve the process efficiency of the Software Development Life Cycle, Testing process, etc.

Product Metrics : Product Metrics deal with the quality of the software product.

Project Metrics : These can be used to measure the efficiency of a project team or any testing

tools being used by the team members.

Another way to categorize metrics is by what it conveys.

Result Metrics : These metrics measure and give output based on the results of an activity/process which is already completed.

Predictive Metrics : These metrics are derived based on other sources and they act as early warning signs of an unfavorable result.

What can we measure by using test metrics? Here are some of the things we can cover using test metrics.

- To measure cost and time to test.
- Overall status of bugs.
- Count of fixed, reopened, closed, Deferred, bugs / measuring different statuses of bugs
- Hidden bugs testing team couldn't find.
- Percentage and coverage of software testing
- Whether the delivery timelines are achievable

We will look at some important metrics which can be used to measure process, product and project status at different phases in the software development and testing life cycles.

1. Requirements Coverage

$$\text{Requirements Coverage} = \left\{ \frac{\text{No of Requirements Covered}}{\text{Total No of Requirements}} \right\} \times 100$$

As we all know, requirements phase is a very important. Having clear requirements matters to the overall quality of the final product. The quality of a finished piece of software is often defined by its ability to meet the requirements. Here what we look at is to monitor the effectiveness of the requirements. Requirement coverage looks at the cross section between the business requirements and actual workflows. Using workflows models can define stronger and more robust test coverage, with an emphasis on the workflows users actually follow. We can consider Requirements Coverage as a percentage of all the available flows against what is being covered by development teams.

2. Test Coverage

$$\text{Test Coverage} = \left\{ \frac{\text{No of lines fo code covered by test suites}}{\text{Total No of Relevant Lines of Code}} \right\} \times 100\%$$

Defined as the extent to which testing covers the product's complete functionality.

This metric is an indication of the completeness of the testing. It does not indicate anything about the effectiveness of the testing. This can be used as a criterion to stop testing. This does not need to be the lines of code. Coverage could be with respect to requirements, functional topic list, business flows, use cases, etc. It can be calculated based on the number of items that were covered vs. the total number of items.

3. Mean Time to Detect (MTTD)

$$\text{Mean Time to Detect} = \left\{ \frac{\text{No of Defects Found}}{\text{Total Execution Time}} \right\}$$

Mean Time to Detect gives a figure on how long does it take for QA professional to find a problem.

Specially QA managers can use this to have some understanding about the efficiency and productivity of the QA team. Here No of Defects can be further taken as No of Valid defects found. There are some other matrices that can be used to calculate the validity of defects entered.

4. Defect Severity Index

1. We assign a number to each severity as : Critical(Sev 1)=8, High(Sev 2)=6, Medium(Sev 3)=3, Low(Sev 4)=1

2. Then we multiply the number of issues in each category by the assigned number as:(No of Critical defects * 8) + (Number of High defects * 6)

3. Then we divide by the Total issue count

$$\frac{((\text{Num of Sev 1s} * 8) + (\text{Number of Sev 2s} * 6) + (\text{Number of Sev 3s} * 3) + (\text{Number of Sev 4s} * 1))}{\text{Total issue count}}$$

Weighted average index of the Severity of defects. A higher severity defect gets a higher weight. S1 is a show stopper, S2 is high severity, S3 is medium & S4 is low. Ideally, this should slope down as test cycles progress. The weighted values used in the defect severity index can differ from organization to organization. Usually the defect severity index is sloping down as the testing cycle progress. This indicates an increasingly favorable trend. As the test cycle progresses severity index going down suggests increasing quality of the application (as lesser number of critical and high severity defects are being reported). If there is an improving trend in the defect severity index, it needs to be addressed immediately.

4. Defect Leakage

$$\text{Test Coverage} = \left\{ \frac{\text{No of lines fo code covered by test suites}}{\text{Total No of Relevant Lines of Code}} \right\} \times 100\%$$

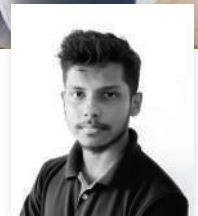
Defect Leakage is the percentage of defects actually leaked from the current testing phase to the subsequent phase.

The total of defects identified in the later phase are taken as a percentage of valid defects entered in the previous phase. It can be used to identify the efficiency of the Quality Assurance (QA) testing. Defect leakage is a deadly index for the QA team. I.e. defect leakage percentage should be minimal in order to prove test team's worth.

Here I have discussed few QA metrics that can be used to track the quality. There are a lot of other QA/Testing metrics too that we can use to track the quality of the product and the work. Tracking the quality is not an easy task, but if we do so it will result in delivering more quality products which will eventually lead to the success of any organization.



Climate Change effect to
IT Industry



Ishan Anuradha

HOW IT INDUSTRY EFFECT TO CLIMATE CHANGE

“Climate Change” which has threatened the world for years, has become the most destructive environmental threat in the century. Today, global temperature has rapidly increased as a result of greenhouse gas emission due to human activity. There are 6 major greenhouse gases which are mentioned by the “Kyoto Protocol” such as carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbon (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆). These greenhouse gases allow radiation rays from the sun to penetrate the atmosphere. When these rays get through the atmosphere, a portion of them reflects towards space as infrared radiation, immediately.

That infrared radiation is absorbed by greenhouse gas, which gather in the atmosphere. As a result of this process, the general temperature of the atmosphere closer to the surface of the Earth is enhanced. Without this natural greenhouse effect, life on earth could not survive.

After the industrial evolution, global warming rapidly increased since man started to use fossil fuels frequently. With this, the population and economic development also began to grow. By today, the amount of greenhouse gases emitted due to human activities is higher than the natural greenhouse effect which existed pre-Industrial Revolution.

Compared to other developed countries, the contribution to the greenhouse effect in Sri Lanka is less, although the climate change impacts all developed and developing countries. But the challenge is that the adaptability to climate change impacts in developed countries is high than that of developing countries. The situation of Sri Lanka is also same. During the recent rainy season, it was reported that many people have perished or gone missing due to floods and landslides. At the same time, people in a few other districts had to face a severe drought due to climate disequilibrium.

As a developing country, we have to adapt to climate change impacts.

At the same time, we should try to mitigate our actions contributing towards climate crises. With the population growth rate and urbanization in Sri Lanka, the amount of CO2 which emits to the atmosphere has increased in the past few years.

Information technology in this regard plays a key role, though we do not notice it. A large number of us use computers on a daily basis, which emit a lot of energy. Also, technical waste is a bigger problem. So we need to solve this not only individually, but collectively as one. Computers contain components which may harm the environment if not disposed properly, therefore we must be mindful about waste disposal.

Sri Lanka needs to adopt concepts like green computing and carbon free computing. Green computing, as the name suggests, is a method of making computer waste (and electronics in general) recyclable and implementing energy efficient technologies. It actually reduces any harmful components of computers or electronic goods, and minimizes environmental harm. The technology used in green computing is known as green technology, and its purpose is to implement technology which is energy efficient.

This can be energy efficient central processing units, servers, accessories or a number of other

components. These technologies help in reducing power consumption of other resources. The overall purpose is to use technologies to reduce environmental pollution, improve energy efficiency in IT and also promote recycling of materials.

When the population is rapidly growing and consumption is enhanced, amount of carbon dioxide and methane which emit from waste dumping yards increase. Therefore, action towards conscious consumerism, tree plantation and urban gardening such as rooftop and vertical gardening should be motivated. Hence the rainwater harvesting system or waste water purification can be maintained to watering them in urban areas. Sustainable waste management procedures such as waste segregation, recycling, composting, sanitary land fillings and bio gas should be implemented since reducing methane and carbon dioxide emits are vital to mitigate climate issues. In addition, we should utilize regenerating resources such as solar energy, wind and natural air instead of using fossil fuel.

Finally, if we can introduce sustainable, environmental friendly development projects such as green computing, emission free computing, green buildings, sustainable waste management systems, remunerative public transport system,

cycling and walking paths, we can contribute to mitigating climate change impacts as a country. In addition, we must reduce our own carbon footprint to convey our journey towards climate justice as conscientious citizens.



Embla Happiness



**Thilanka
Karunarathne**

EMBLA HAPPINESS

Employee Health and Wellbeing

The most important asset of any company is its employees. The success of a company undoubtedly depends on the health, well-being and happiness of its employees, as it leads to great work and maximized productivity. When we say healthy, it means not just physical health, but mental health and happiness as well, therefore it is important to consider employee health in order to have the organization efficiently and effectively. This has raised a trend in the IT industry to consider employee wellness more seriously.

Due to the nature of work, meeting targets and workload, employees are often subjected to higher stress levels, obesity, non-communicable diseases,

body pains, anxiety, depression, alcoholism and similar health concerns. Implementing a health and well-being policy in a company has proven to result in stronger relationships between employers and employees, reduced absenteeism, reduced stress, improved performance, improved corporate image, better staff retention, improved sense of well-being and reduced risk factors for illnesses.

Embla Software Innovation has been taking measures to help employees improve their health and well-being, and initiated the “Happiness” policy to formalize the procedure.

How It All Began

Monitoring and executing employee well-being has been a priority mandate of the Embla

culture. Embla has taken measures to improve health and well-being through several programs throughout the years since its inception in 2009. After continuously monitoring the outcome from these programs, several changes were made in order to achieve the goal of improving employee well-being.

Embla has a flat organizational hierarchy, where small teams are working directly with Norwegian clients without the presence of a project manager. In this case, the team holds more responsibility than a traditional project manager. Embla has taken the general behavior of employees in the IT industry into consideration

in order to make the Happiness ideal a success. We have been able to identify that while the issues related to physical fitness can be a major concern, issues related to mental wellbeing are crucial as well, since the IT industry is mainly comprised of knowledge workers.

Furthermore, stressed and unhappy employees lead to low productivity and inability to meet expectations of the clients. This results in unhappy customers, misunderstandings, delivery failures, and an overall bad reputation to the company. These conditions could worsen the employee more, and the cycle continues. Mentally, physically and socially unfit employees exert a negative effect on the growth of any company in the long run.

Since inspection several initiatives have taken place to identify risk factors and possible solutions for the above-mentioned problems. Information about employees such as physical and psychological health are gathered through an interview sheet in order to perform necessary changes in the working environment. In addition, to improving the infrastructure, dual monitors and comfortable chairs were provided. Evaluations on working conditions and happiness of employees at work with regard to company process were carried out as well.

In 2014, the Embla Sports Committee was Initiated to conduct events which improve social well-being. In 2015, the Embla Extended Process was initiated to improve the satisfaction of employees as well as clients. The Embla Sports Committee was rebranded to Embla Recreations, which undertakes the social activities within the company. In 2016, the Embla Fitness Club was initiated to take responsibility of physical fitness activities and health checkups. Client appreciation towards the teams was also encouraged.

Finally, in 2018, "Embla Happiness" was initiated to formalize all existing well-being events into one Embla well-being policy.

Happiness at Embla

With the goal of making employees "fit" in physical, mental and social factors, Embla has initiated the "Happiness" wellbeing program to create happiness at Embla.

The process of improving mental, physical and social well-being has been taken care of by the collaboration of four parties, namely, Embla Recreation, Embla Fitness, Embla Extended Process and Embla HR.

(Embla happiness model)

Even though the four internal communities play a major role in the well-being of the employees,

the personal effort put in by the employees is a vital factor. Therefore, Embla encourages all employees to take part and assist in any way they can to ensure they work in an ideal environment.

Embla Recreation takes care of social fitness of the employees. Interactions among employees are encouraged through non work related activities and events. Employees are given the opportunity by the committee to come up with suggestions for initiatives to improve social connections and work place conditions.

Embla Extended Process takes employee mental well-being into consideration. It takes care of assisting the employees to create a work-life balance and to improve productivity by avoiding cultural conflicts, misunderstandings and miscommunications. Better relationships with the clients are also encouraged.

Embla HR checks on the processes to make sure they are aligned with HR policies.

In order to identify the health issues and concerns of the employees, we have conducted surveys and risk analysis. Based on this information, we have derived goals to improve physical, mental and social fitness of the employees.

Responsibilities of their goals are taken care of by Embla Recreation, Embla Fitness, Embla Extended Process and Embla HR.

Embla Recreation has been organizing events such as New Year celebrations, Annual trip, Annual night, Embla Acoustica Night and many others to make sure that the employees are socially and mentally fit. Meanwhile, Embla Fitness has been conducting events such as ergonomic surveys, the annual cricket tournament, annual walk, fitness challenge. to ensure the physical fitness of the employees.

Embla Extended Process is responsible for the mental fitness of the employees, and has been taking actions such as encouraging and guiding the employees to have clear scopes for their goals and tasks, making sure that teams have release plans, start testing from the beginning, encouraging the clients to give feedback and ratings, making sure that teams have good collaboration with the clients, conducting client workshops to achieve its goals.

While everything is in progress, Embla HR monitors all the processes, and conducts employee appreciation days, spot awards, year-end awards, which makes sure that the office environment is favorable for work, in terms of infrastructure and surroundings.

Embla Wins Gold

Thanks to the “Happiness” program, Embla has been recognized as a company with some of the best health and productivity management as per industry standards. This year, Embla won the Gold Award for Corporate Health & Productivity at the Sri Lanka Corporate Health and Productivity Awards 2019, which was held by the Japan External Trade Organization (JETRO) and Chamber of Young Lankan Entrepreneurs (COYLE). This award is given with the aim of rewarding companies with outstanding engagement towards employee health and wellbeing. This win comes as a great indicator that the “Happiness” program is a great success, and has yielded exquisitely talented and happy employees.



Petter



Interviewed by
Sasini De Silva

CLIENT EXPERIENCE AT EMBLA

Sasini : Could you brief the nature of your business?

Petter : Our business is leaning towards the environment around doors and fireproofing major building sites such as hospitals, museums, schools, super markets etc. We, Microbuild carry our business through two departments where one is consultants, project leaders helping contractors, architects and building owners in Oslo and Kristiansand and the other is developing applications for planning, calculating and maintaining buildings.

Could you share the way how you got to know Embla?

We were contacted by an employee working for Embla in Norway. At the time we were already had the experience of working with developers from another country in Europe.

Why did you think that Embla is the best that fits with your company?

It all began with my visit to Embla to have a look on what Embla was doing with regard to what kind of customers they already had and their perspective to working with foreign companies. And also we were eager to have overall view on how it would work with developers outlying from Norway. I was delighted with their approach to working towards foreign customers.

Truthfully the major reason behind my choice on moving to Embla was that Stein Inge and Chandimal were very clear on its key feature that Embla would be an extended office. I became fascinated by the fact that having developers working

for us without any interference from anyone else in Embla.

Could you share a bit from your experience you had with the development team in Embla?

Let me explain this in a team and business perspective. Good code is something which can be achieved by anyone. But good application and good decisions are hard to make. The key to make this happen is having an open line of communication which is excellent with the developers that I have been working with in Sri Lanka. In my perspective we are improving our team together every day which is crucial to good applications, not only to good code.

Looking from a general point of view, it seems to me that Sri Lanka is having great collaborations of schools and communities which are good. I do believe that having an open developer community across companies and technologies is important and will help everyone to improve while bringing best out of them. The level of development skills in my team is awesome. They obviously have good sense of the technology that we are working with but more importantly they have a good overview from a market / domain perspective which we all need to have as developers.

As you see, what are the strengths of Embla?

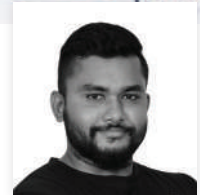
The best thing as mentioned is that Embla is an extended office where there is no interruption to the developing team from internal hands of Embla. In my point of view it is a strength that all the teams in Embla are working towards Norwegian customers and companies. Therefore, a little bit of culture that lives between Sri Lanka and Norway can be shared among developers as it is the same. It could be a comfort for the developers/employees to understand the culture of the clients that they are working with. I know there are a lot of companies in Sri Lanka working towards Norwegian customers and I guess all have some cultural challenges but in general I think it's working out fine even though we Norwegians are a bit strange.

What is your opinion on practicing agile in the team?

Agile is a wide word. But this must be said that practicing agile that you read in a book is not the way to go. It evolves and take different turns even in our business and domain which are building turning into agile. In the process of planning building and maintaining big buildings they are now more focused on practicing agile and lean. There is no exact way of practicing agile. It might be different from one team to another. But I do believe that if everybody in the team agree on one approach though there are back and forth visits, it would be the best approach to go with. I guess in my opinion the people that are best at giving me input on ways to run teams with an agile is not the ones that are only talking about it but rather ones actually practicing it every day.

Could you sum up your client experience at Embla with just few words?

Good environment. Great team.



Tharush Jayananda

UX REVIEWS FOR NOOBS

Prologue

Over the course of the last decade, UX has grown stronger and organisations has understood the fact that user needs are important than business needs therefore leading companies invest heavily on design teams to provide the best user experience possible for their users.

In this article I will be explaining how to conduct a UX review for your product.

Objectives

First and foremost, objectives of the review has to be set. This ensures that all the parties who involved in the review has the same end user goals.

- Identify opportunities
- Substantiate design changes
- Identify technical issues (bugs and blockers)
- Discuss/brainstorm UX improvements

User personas & user flows/ journey maps

Now let's focus on user needs.

Creating user personas are my 'go to tool' in order to understand user needs. It assists you to create a hypothesized user which consists of facts, behaviors and the needs/ goals related to the product which you emphasize on.

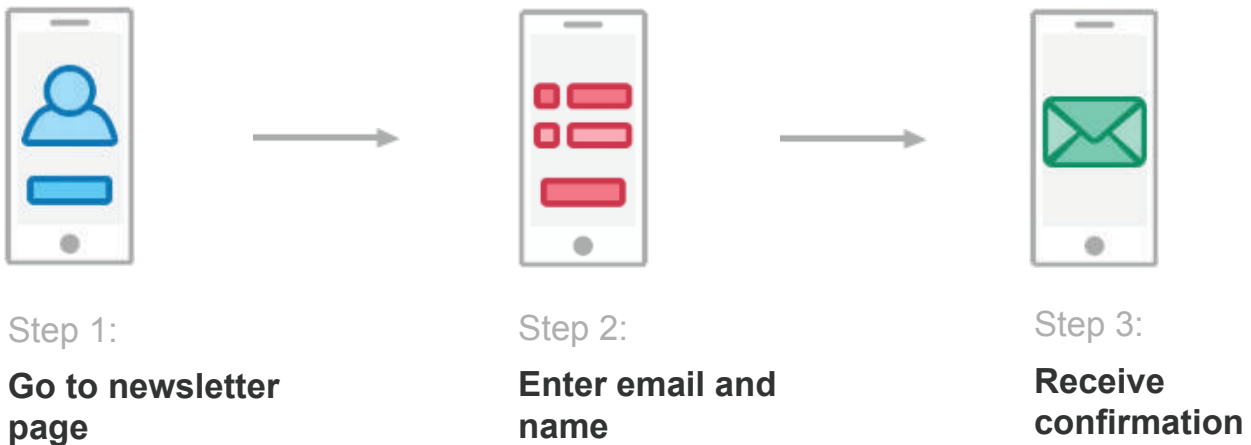


With a thorough understanding of your product business objectives, user personas can be written based on research materials or even information gathered via interviews conducted with people who has similar goals or to be precise, real users of the product.

Once you understand your users, next step is to identify how they would achieve their goals. This can be easily done by creating a user flow / journey map. These diagrams consist of the intended steps to perform an action aka happy path or information gathered via interviews with the real users. If conducting the latter is difficult, you could use behavioral flow diagrams of google analytics or integrate a tool similar to logrocket in order to gather information.

User Flow:

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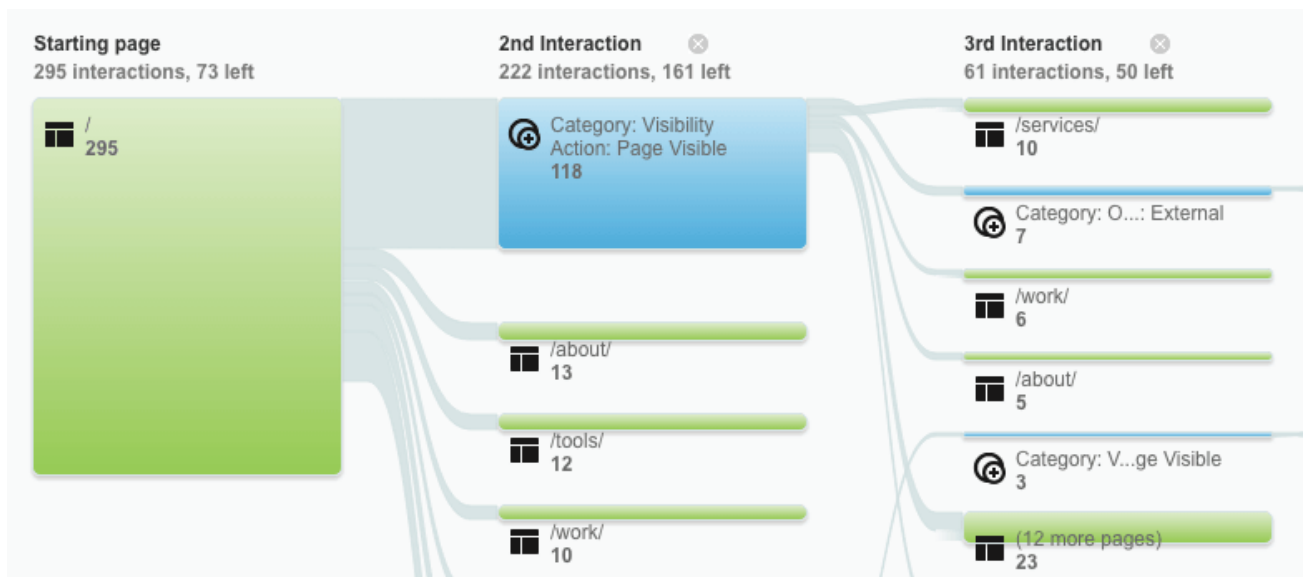
These diagrams can be created easily using draw.io, balsmiq, envision, UX pin or google drawings.

Data analysis

Data is basically evidence for your UX review, as those will back up your findings.

As a free tool, google analytics is recommended as it will provide user interaction data assuming that you know what you are looking for.

As mentioned above behavioral flow diagrams will help you to understand the steps of the users, data drop offs and analyze/ compare various user steps.



Make sure that you keep the user persona information in mind whilst assessing through user journeys, as you may see potential gaps in between user behavioral patterns.

Device information (traffic based on device) may help you to decide which screen sizes to focus on so that you can improve user experience on any device.

You may not have all the information which is explained above but bear in mind that 'better data: better results'.

Usability review

Usability speaks to the core of the review—is the product usable?

It's time to test your product using the information which you gathered and processed. Use the product on multiple device sizes/ operating systems on various perspectives (use user personas) whilst following the user journey maps you made. In the end be unorthodox, go bonkers with testing.

As a result, you may pick up frustrating pain points to perform a task, design flaws in the functionalities, poor guidance/ labeling issues, broken components, responsive mishaps in the application. Once done, step into the product owner mindset and conduct the same process again.

Avoid solutions in this stage as you are still identifying, document all the findings and divide them into segments as given below.

User journeys :

- User has to scroll to see vital information or click on most used buttons
- Important information is hidden within the information architecture (vital information in pop-ups)
- Displaying least important information inline
- Too many clicks to perform an action
- Inconsistent user journeys

Design :

- Design inconsistencies (label/ button sizes are different etc.)
- Alignment issues
- Poor page hierarchy

Mobile :

- Responsive issues
- Scale issues (content too big/ too small)
- Zooming in required (spacing issues)

General :

List all the issues which do not belong to above segments.

Accessibility review

Accessibility is often overlooked by designers though its important that building products/ applications that can be used by a wide range of people, including individuals who have visual, motor, auditory, speech or cognitive disabilities.

Use 'Google Lighthouse' via chrome developer tools to identify accessibility issues which your product has. Generated results consist of performance, progressive web app features, accessibility, best practices and SEO.



Progressive Web App



Performance



Accessibility



Best Practices



Progressive Web App

These audits validate the aspects of a Progressive Web App, as specified by the baseline [PWA Checklist](#).

✘ Contains some content when JavaScript is not available

⚠ The page body should render some content if its scripts are not available.

Epilogue

Discuss and brainstorm the review of the product with the stakeholders and prioritize actions to take before it becomes a coffee stained desk drop.

Mobbing would be an effective, lightning fast method to incorporate these changes.

What is mobbing? That's a topic for another article. I hope you find this helpful.



Carry your own weather



Sharon Kern

CARRY YOUR OWN WEATHER

What if we all can carry our own weather with us? Predicting if it's going to be a gloomy or a sunny day. What does it mean to 'Carry your own weather' with you? There are days which are quite humid and the days quite cold and wet that you want to be indoors. And then people start complaining about the weather. Most people let the weather affect their day or mood. This is generally how people react to normal weather either sun or rain. Similarly as humans we have a weather that determines our day.

Complaining is common

We often complain that the morning was not good or the day is not good due to something had not gone well as planned.

Or it's a bad day at work. And that becomes a reason for the day to be a bad day.

Reactive Responses

It's not really what happens to us is bad, but our response to what happens to us that hurts us. The moment we start reacting without knowing or thinking of the outcome we end up been unhappy. Things can hurt physically or economically and cause sorrow. But our character, our basic identity, does not have to be hurt at all.

Proactive Responses

Choose to react positively to the negative people you meet, and the negative things that happen to you. When people are

proactive, they pause to allow themselves the freedom to choose their response based on principles and desired results.

Carry your weather with you. In this way, whether it rains or shines outside, it will be sunny inside. Proactive people can carry their own weather with them. Whether it rains or shines makes no difference to them. It's the mindset that make the difference.

"Where ever you go, no matter what the weather, always bring your own sunshine" – Anthony J.D Angelo



Factors Affecting the Productivity of a Scrum Team



Upeksha Ranawake

FACTORS AFFECTING THE PRODUCTIVITY OF A SCRUM TEAM

The term productivity is not a novel concept to the world or to the software industry. Although the productivity has been discussed for a considerable period of time it remains as a debatable issue. The concept of productivity came into the picture when people started feeling the scarcity for limited resources. Different people from different eras came up with various definitions for productivity.

The common definition for productivity is expressed as the ratio of expected output to input. On 21st century with the vast increase of knowledge workers, the concept of productivity was discussed by relating productivi

ty to knowledge workers. A knowledge worker is a high level employee who applies theoretical and analytical knowledge acquired through formal education and applies his or her experience to develop new products and service.

So a software development team is strongly related to the knowledge worker productivity.

This article is based on previous researches done regarding factors affecting the productivity of a scrum team and findings of a mini research followed inside the company with the participation of different roles in a scrum team. The identified 10 factors were as follows.

1. Proper planning

Not having a proper planning for each sprint at the beginning was identified as one of the main factors which will drop the productivity of a scrum team. Having a proper planning session at the beginning of the sprint and having a better understanding within the product owner and other team members when starting the sprint is very important. Some product owners emphasized that normally team members are more concerned about work and do not like to spend time on planning thinking that it is a waste of time. But when teams spend a consider-

beginning of the sprint and when they agree with more realistic time estimations, It helps to have less misunderstandings within the team and will reduce the time spend on daily scrum meetings to solve the misunderstandings. So it will save time and cost which should be spent and will increase the productivity of a scrum team. Insufficient use of scrum practices will make the planning sessions a failure and it would reduce the productivity of a scrum team as well. If a product owner cannot understand the scrum concepts, planning will not be successful and it would also affect the team's success in a bad manner.

2. Understanding the customer requirements clearly

The requirements should be very clearly understood by the team. Otherwise rework and misunderstandings would make the team less productive. When the requirements are changed in the middle of the sprint it would affect scrum team negatively. In terms of scrum if a product owner not specified the user story in a clear manner and when the team not clarify the requirement correctly and unable to agree on the requirement at the beginning, it will affect badly.

3. Better Communication

To become a productive team having proper communication

with product owner and team members is very important. The requirements could be clarified well and the bottlenecks could be identified earlier. Transparency is identified as an important factor which affects the productivity of a scrum team. When a team member is not transparent to the others the team would not be able to help. Team would be unable to understand the weaknesses and strengths within them. If a team member is unable to update honestly about his/her issues, it would affect the productivity of the team in a negative way.

4. Ergonomics

Having a healthy environment and a comfortable environment will directly affect the productivity of a team. The factor ergonomics is selected because it goes hand in hand with experience. In other words it has a practical value. For an example if an organization have often power cuts, unbearable coldness due to air condition, neck pains and back pains because of the adjustments of the chairs etc. When working around uncomfortable environment it would directly influence upon productivity of a scrum team.

5. Cultural barriers

When teams are working with international clients these

cultural barriers also play a major role. For example having mixed designations in Scandinavian countries do not make conflicts within the team members. But In Asian countries they are not used for it and make conflicts within the team. This can be happened in a way which affects the productivity in a negative way. Some other facts are the language, behaviour and attitude differences. According to some product owners the way Sri Lankans response saying 'yes' to everything makes them difficult to understand what the team say. The way Sri Lankans love to stay in the comfort zone also can be taken as a cultural obstruction. So these cultural obstructions make miscommunication and it affects the productivity of a scrum team in negative way.

6. Staff turnover

When a team member leave, the rest of the team members have to put more effort on the work to be completed on time and when a new person is appointed they have to transfer the knowledge to the new team member. In a situation where English is the second language, both of the parties have to handle the language properly. When one party cannot understand what the other party says the productivity of the team could be dropped.

7. Team work

Mutual trust among team members, team spirit and caring about each other in the team is very important. In order to achieve the same goal as a team, above factors are very much important and it affects the productivity in a positive manner.

8. Training and development

When proper training and development is provided the team members can quickly adapt to the technology and less time will be taken to complete the work with the expected quality. This is not only about having technical trainings, non technical trainings which help to improve the team work, personal qualities also important.

9. Knowledge of the team members

The knowledge of the team members can affect a team in a negative or positive way. For example when all the team members have proper knowledge on scrum artefacts they can follow it correctly. Not only that the domain knowledge, having knowledge on different technologies also affects in a positive way.

10. Availability of proper tools

If the devices and tools are not in place when they are needed the productivity will be low. For an example if the team does not have proper tools to test a mobile application, automate testing, deployments they cannot deliver products on time.

INTERNSHIP EXPERIENCE

Every fresh graduate in IT, steps out from the university, having hands on a dream to begin their professional career at a workplace where they could sharpen up their professional lives. I'm lucky to say that I could be able to make that dream a reality by joining Embla as a Software Engineer in August 2018. It was a great opportunity for me to be a part of this amazing workplace and I believe that it was the best decision I have ever made. In Embla, new technologies, innovative ideas are always welcomed, and it tends to provide significant exposure to enhance the professional career of the developer. The team I have been assigned to work with is such a cool place with great collaboration, where I'm able to keep in touch with the latest technologies in the industry. The direct client interaction that I'm able to experience is a rare opportunity for a developer who is at an initial stage of her professional career. There is always room for personal development of employees through the continuous feedback from the team members.

Most importantly the contribution towards the career development through tech talks, lightning talks and geek sessions where the employees can actively participate, is tremendous.

In my perspective, the unique attribute of Embla is a pleasant working culture which makes employees motivated with fun, joy and equality. This working culture is empowered by the various clubs which facilitate employee wellbeing and development, irrespective of the hierarchy. With the great experience so far I had as a fresher in Embla, I believe that Embla is the best place for a fresher to start his professional career as a developer.



Sandeera Jayampathi



Ruvin Jagoda

Embla is a great place to get exposure as a software intern. As an intern I got ample opportunity to work with different technologies. Unlike other companies interns at Embla are assigned to client projects. It was a unique and invaluable opportunity that helped me to learn how to face a client for the first time.

Above all what I admire the most about Embla is their "people". All teams extended their fullest support and guidance to develop myself. We were continuously evaluated and mentored to check our progress, in return we were given the opportunity to reveal our experience about the internship program.

Further, we got the opportunity to participate and organize many events at Embla. Internship at Embla was a great experience that facilitated my career path.

HAPPY NEW YEAR



ALUTH AVURUDU 2019



POSON DANSALA 2019



ANNUAL TRIP 2019



UPCOMING EVENTS



Embla
Acoustica

Angular
Meetup

Paintball
Tournament

Gaming
Tournament

Carrom
Tournament

Halloween

Awards and
Year end Party

CREDITS

WRITERS



COMPLETE AUTOMATION WITH SERVERLESS / CLOUDFORMATION
Dasith Kuruppu



EPM... JOURNEY TO SERVICE EXCELLENCE
Eranga Rajapaksha



USING QA METRICS THROUGHOUT THE QA LIFE CYCLE
Hiran Samarawickrama



HOW IT INDUSTRY EFFECT TO CLIMATE CHANGE
Ishan Anuradha



EMBLA HAPPINESS
Thilanka Karunarathne



CLIENT EXPERIENCE AT EMBLA
Sasini De Silva



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REVIEWERS



CHANDIMAL WICKRAMARATNE



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