



Micro Frontends

How to evolve to an extensible frontend

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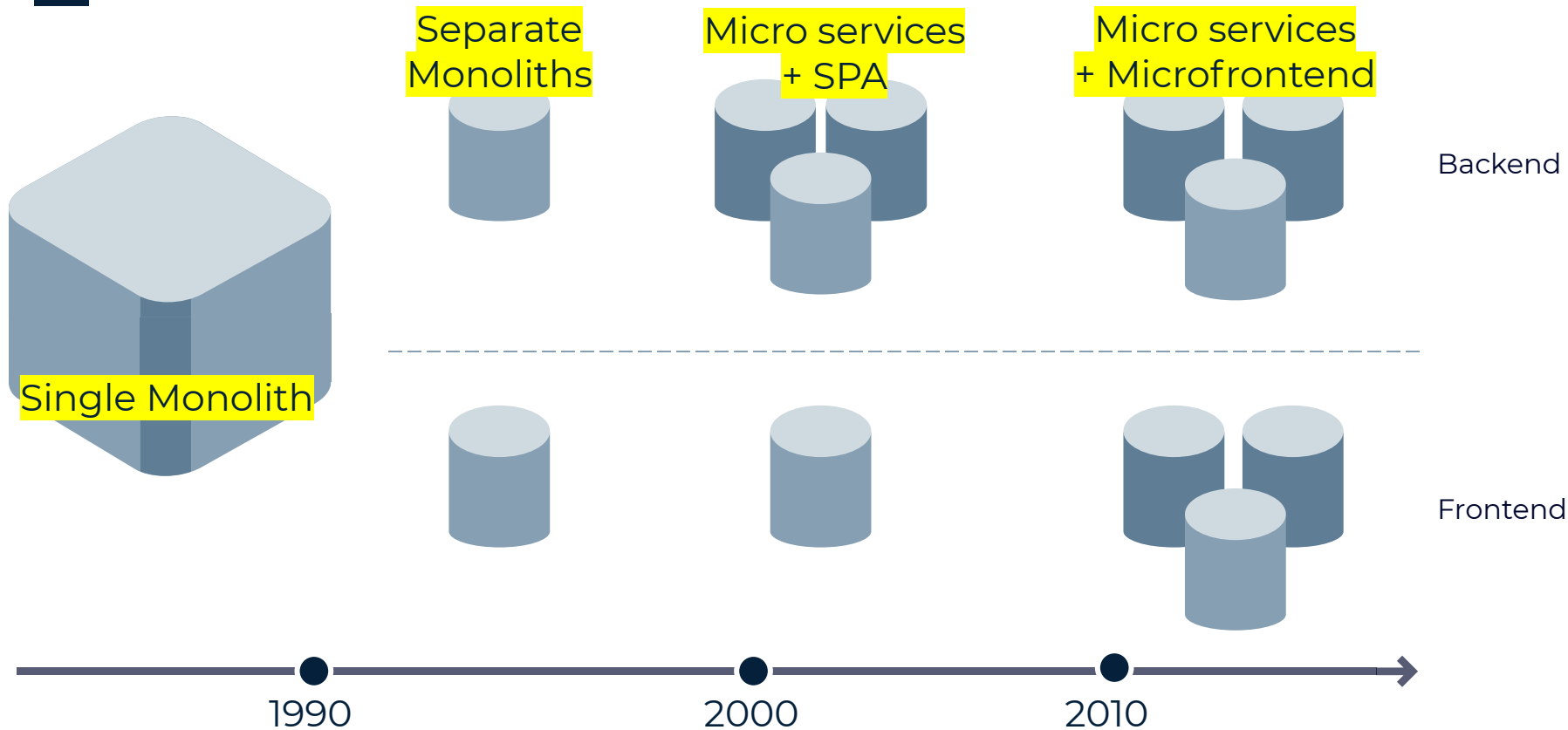


Globant▶

The Problem

You have this **complex software** that is developed by a **huge team** and it's a mess to maintain. To make it even worse, you have additional requirements like **high availability** and **short delivery times**.

A brief history of web apps architecture



— What is micro frontend architecture?

It is an approach to develop web applications as a composition of small frontend apps representing a business subdomain.

How do they look to the user?

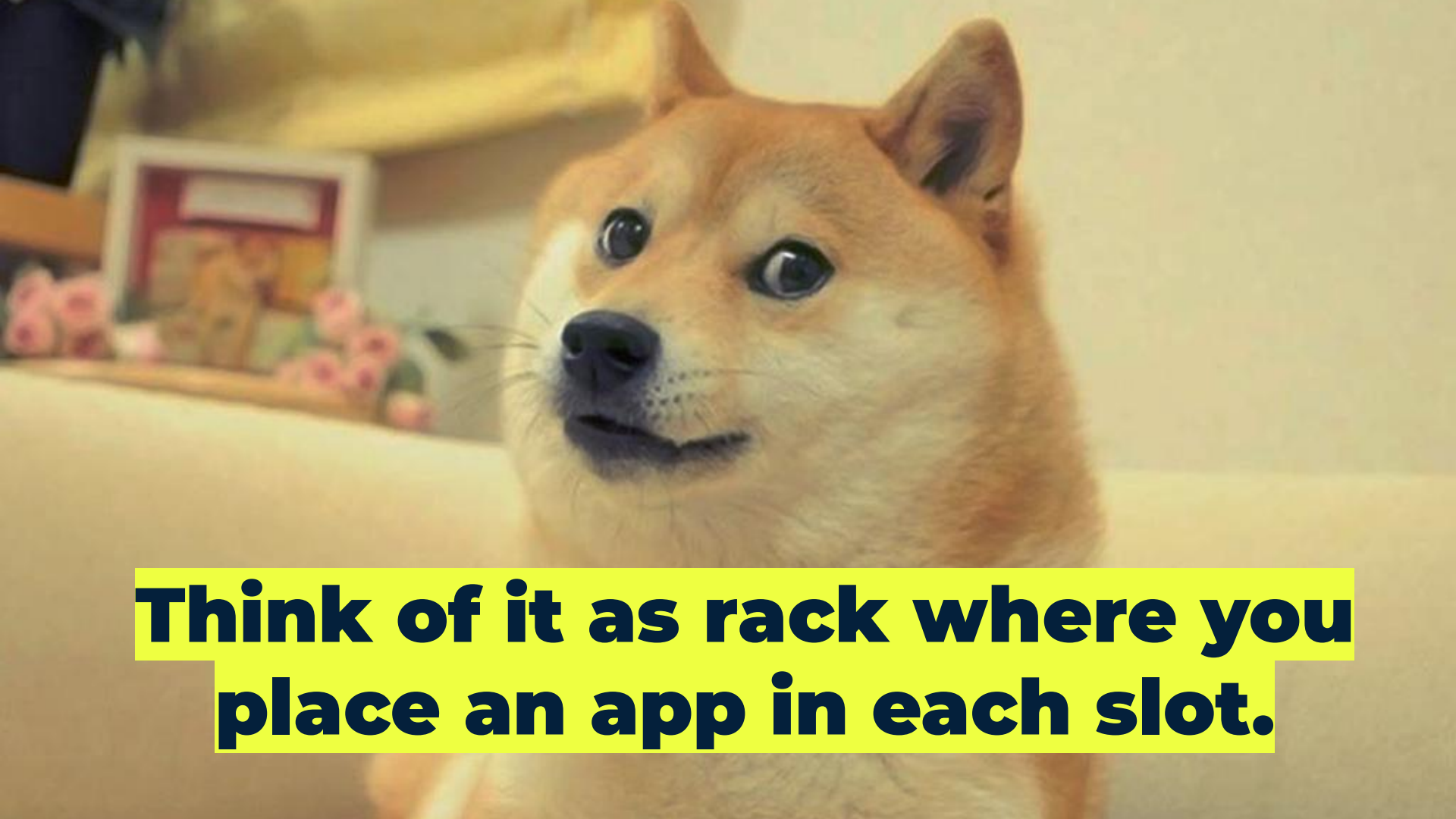
The image shows a screenshot of a Facebook user profile page for Benjamin StuMx. The page is viewed from a desktop browser. Several UI elements are highlighted with red rectangular boxes:

- Top Navigation Bar:** Includes the Facebook logo, a search bar, and the user's name "Benjamin StuMx" with navigation links for "Inicio", "Crear", and a menu icon.
- Left Sidebar:** Contains navigation links such as "Últimas noticias", "Messenger", "Watch", "Marketplace", and a section for "Accesos directos" (Direct Access) with links to "Juegos de Mesa...", "Grupo oficial de...", "Jugadores De M...", "BigMiniMentor", "Magic", "Explorar", "Guardado", "Grupos", "Páginas", "Eventos", and "Recaudaciones de...".
- Profile Header:** Shows the user's name "Benjamin StuMx M...", profile picture, and a "Crear publicación" (Create Post) button.
- Post Area:** Displays a post by "Euni Alvarado Perez" from 13 minutes ago, featuring a photo of a person and text about a deadline.
- Right Sidebar:** Shows a list of friends or contacts, including "Uriel Frias", "Eliás Mochán", "Norman Avila", "Fabs Ansara", "Erasmus Leon", "Sebastian Arellano", "Laus R López", "Edgar Ztrokero", "Sara Pérez", "Ken Luna", "Luis Castrejon", "Jorge Armando Ibarra...", "Violetta Farias", "Emmanuel Maldonado", "Ae Maeth", and "CERCA" (Nearby) with a list of nearby users like "Antonio Sánchez Cuevas" and "Christian Aguirre".
- Advertisements:** A section titled "Publicidad" (Advertisement) featuring an Amazon ad for "Onkyo DAC-HA200(B) Hogar Alámbrico Neg..." and a "Máscara De Látex" (Latex Mask) ad.

How do they look like to the browser?



```
<div id="contentArea" class="_1415 _1qkq _1qkx" role="main">
  <div id="stream_pagelet" data-referrer="stream_pagelet" data-at-shortcutkeys="{"j":"centra
la siguiente historia","k":"centrarse en _?":"mostrar la ayuda de m\u00e9todos abreviados
teclado"}">
    <div class="_2c44"></div>
    <div id="pagelet_megaphone" data-referrer="pagelet_megaphone"></div>
    <div id="pagelet_composer" data-referrer="pagelet_composer">...</div>
    <div id="pagelet_prompts" data-referrer="pagelet_prompts"></div>
    <div id="stories_pagelet_below_composer" class="pagelet" data-
referrer="stories_pagelet_below_composer">...</div>
    <div id="topnews_main_stream_408239535924329" data-
referrer="topnews_main_stream_408239535924329" data-gt="{"ref":"nf_generic"}">...</div>
  </div>
  <span>...</span>
</div>
```



**Think of it as rack where you
place an app in each slot.**

```
6 <title></title>
7 <meta name="viewport" content="width=device-width, initial-scale=1.0, maximum-scale=1.0, user-scalable=no">
8 <link rel="shortcut icon" href="/favicon.ico" type="image/x-icon">
9 <link rel="icon" href="/favicon.ico" type="image/x-icon">
10 <!--CSS-->
11 <link type="text/css" rel="stylesheet" href="css/materialize.min.css" media="screen, projection">
12 <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/font-awesome/4.6.3/css/font-awesome.min.css">
13 <link rel="stylesheet" href="/css/animate.css">
14 <link rel="stylesheet" href="css/theme.css">
```

EXAMPLE!

```
15 </head>
16 <body>
17   <!-- banner -->
18   <div class="banner">
19     <nav class="nav">
20       <div class="nav-wrapper">
21         <div class="container">
22           <a href="#" class="brand-logo hide-on-med-and-up"><span style="font-weight: bold">STARTER</span><span style="font-weight: bold">network and workspace tool for founders, IF it's an issue, it's a problem</span></a>
23         </div>
24       </div>
25     </div>
26     <div class="container">
27       <div class="row">
28         <div class="col m8 m18 hide-on-small-only">
29           <div class="card">
30             <div class="card-header">
31               <h4>STARTER</h4>
32             </div>
33             <div class="card-body">
34               <p>This is the starter kit for the network and workspace tool for founders, IF it's an issue, it's a problem</p>
35             </div>
36           </div>
37         <div class="col m18 m8 hide-on-small-only">
38           <div class="card">
39             <div class="card-header">
40               <h4>STARTER</h4>
41             </div>
42             <div class="card-body">
43               <p>This is the starter kit for the network and workspace tool for founders, IF it's an issue, it's a problem</p>
44             </div>
45           </div>
46         </div>
47       </div>
48     </div>
49   </div>
```



Challenges

Web page composition

We want it to feel as a single application



iframes



Single-SPA



Web Components



Open Components

Visual consistency

We still want our users to feel as if they are interacting with a single application



Design Guild

Share data

Even if they are highly independent, they still need to talk to each other.



NgRx



Redux

Testing strategy

Enfasis on integration tests



Integration Framework

Objectives

Tools

Trade offs



→ Organizational
Flexibility

VS



- Increased complexity
- Increased bundle sizes
and data transfer
- Accessibility issues

When should I use them



One person

Useful in this range



Group



Simple HTML

Useful in this range



Image editor



<https://github.com/StuMx/microfrontends-talk>

Thanks

