

Web Components

Craig West

Feel free to contact me: **craig@wpjs.co.uk**

Repo with course files, YouTube videos and slides:

<https://github.com/iwswordpress/>

58 in human years – 243 in tech years

Where/what were you in 1979?

My start in computing at school in **1979**



1980: At University, I studied Chemistry and used MS-DOS, client/server main frame systems.

ZX-Spectrum computer and Jupiter Ace.



Source:Wikimedia Commons

In this talk...

- What is a Web Component.
- How do we use them.
- How do we make them:
 - - with build tools (not frameworks).
 - - using frameworks.
- Using Web Components as interconnected micro apps/services.
- Open a conversation about state of JS world...

International JS Conference London 2018 – Key Note Speech

<https://www.youtube.com/watch?v=1KJQurclLdw>

Web Components & Micro Apps: Angular, React & Vue peacefully united?



International
JavaScript
Conference

**Angular, React, Vue
and Co. - peacefully
united thanks to Web
Components and Micro
Apps**

Manfred Steyer
SOFTWAREarchitekt.at



Web Components

Who uses Web Components?

- Google 20,000+.
- Google Accelerated Mobile Pages.
- Salesforce.
- Onsen UI library.
- **Ionic and Ionic/ReactJS/Angular** (Ionic Apps with Capacitor can run on IOS, Android, Web and Electron). *'Write once, run anywhere...'*

What is HTML?

`CLICK EVENT`

props

slot api & in built click method

MY FRAME:

It is like `<a>` is syntax to create an instance of a class, `HTMLAnchorElement`, which can then have its methods and properties used:

`<a> === objA = new HTMLAnchorElement`

Thus with web components in `index.html` we can do the following:

`document.querySelector('my-webcomponent').method()`

<https://developer.mozilla.org/en-US/docs/Web/API/HTMLAnchorElement>

What is a Web Component?

```
<my-component> </my-component>  
  <script src="file.js"> </script>
```

- Must contain at least one hyphen.
- Use just like any HTML tag.
- They extend HTMLElement class.
- Hybrids is a non-class based library - <https://hybrids.js.org/>
<https://www.webcomponents.org/>
<https://custom-elements-everywhere.com/>
(Making sure frameworks and custom elements can be BFFs)

COMMUNICATION

PROPS DOWN

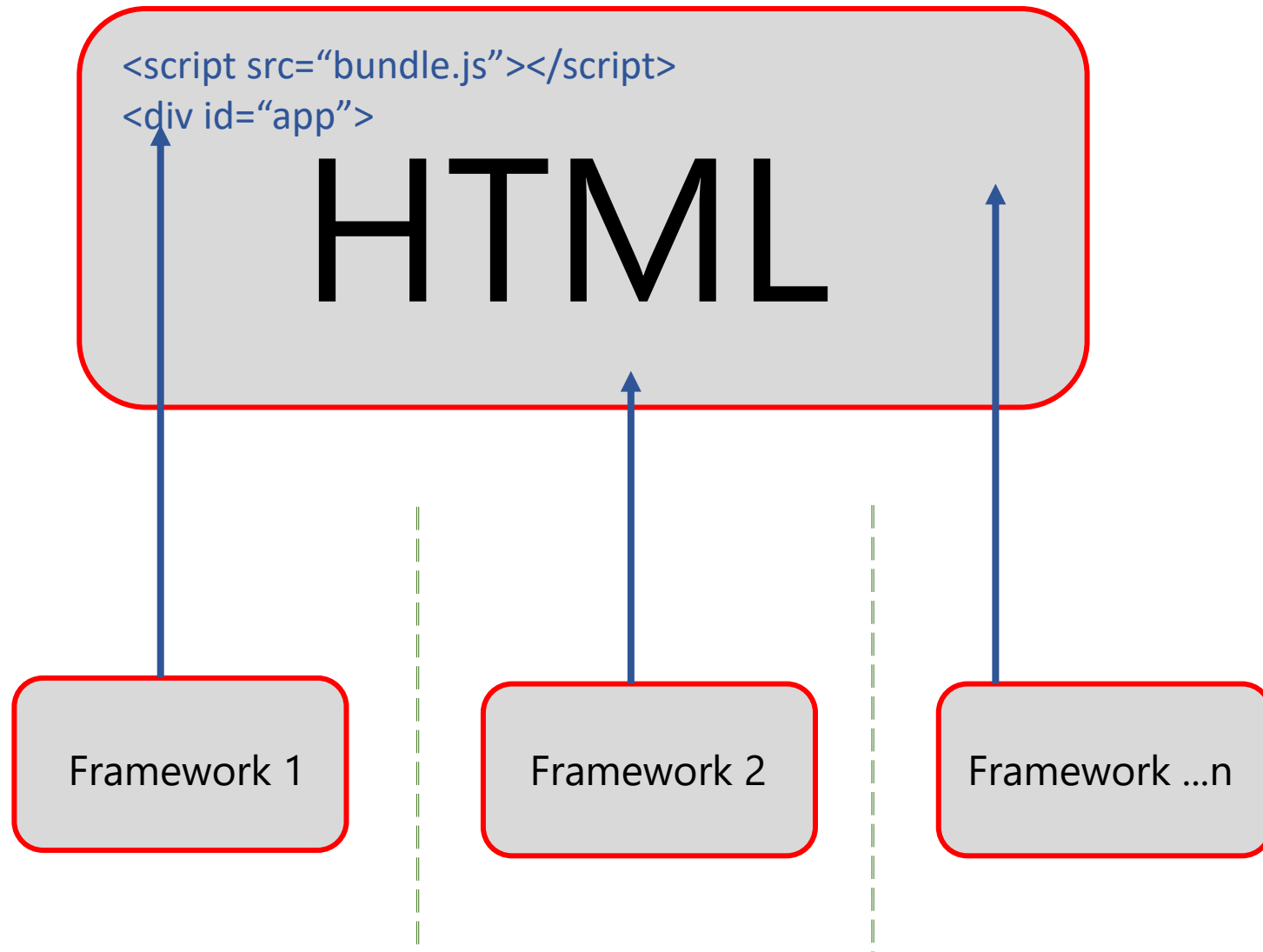
Demo: 06-library/01-ndc-show-post

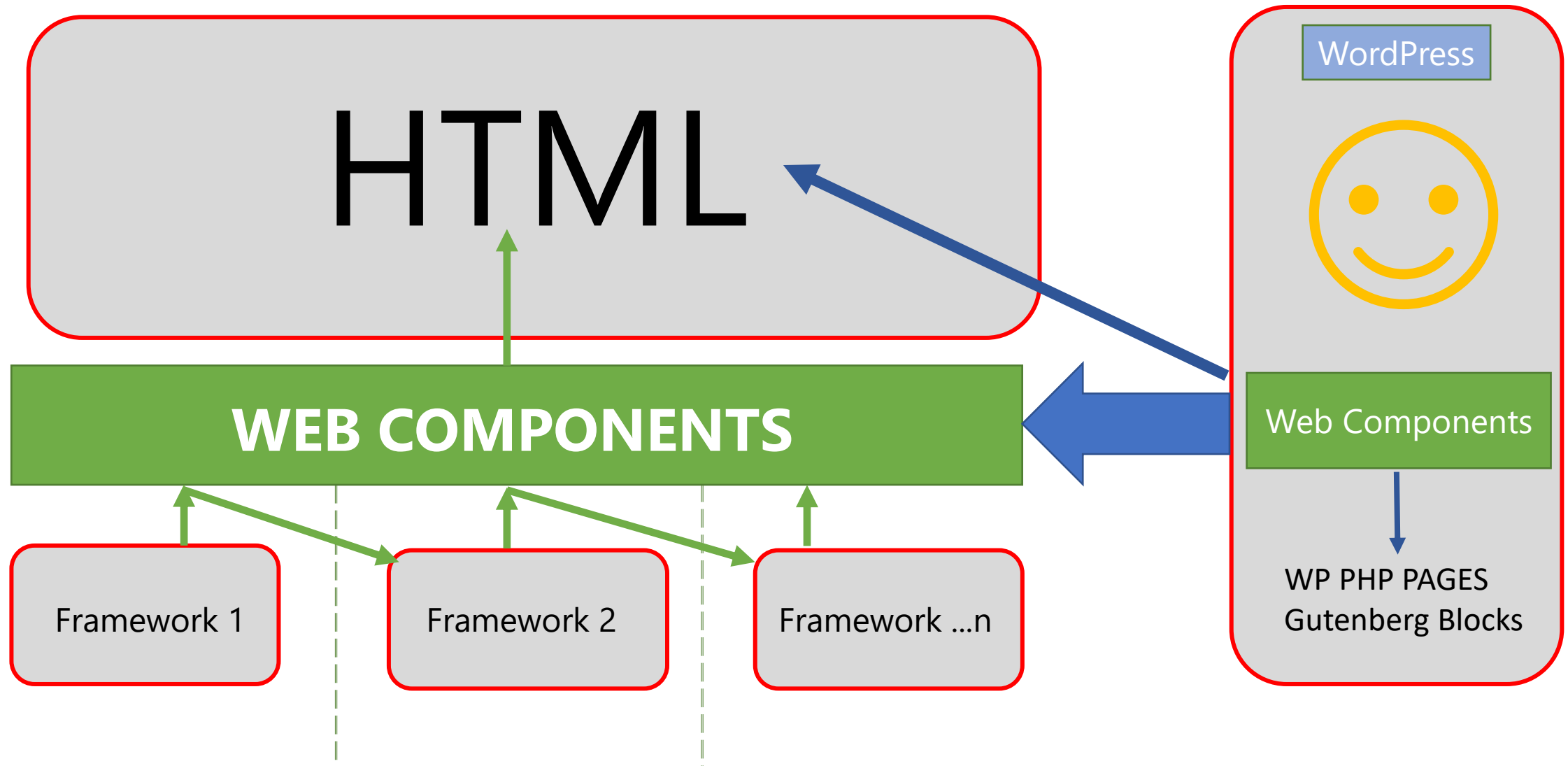
EVENTS UP

Demo: 05-events/15-child-to-parent

We use JS Custom Events to send event and data.

NB Methods and properties on components can be directly accessed.
This would be a design choice as components tend to use props down events up, rather than sibling to sibling.





Build tools

JS compilers (not frameworks):

- Stencil JS (Part of Ionic)

- Lit Element/Lit HTML

- Svelte

- Open WC

Wrappers:

- Vue, Angular, React etc have builds that add a web component wrapper.

Types of components

These are only limited by JS.

We will look at couple of UI components and many more highly functional components that have built in:

- Fetch requests.
- Lazy loading and dynamic loading (scripts/components).
- Storing JSON in IndexedDB and rendering it via templates.
- Authentication and storage of JSON Web Tokens.
- Added offline capability and 'instant' pages.

Let's see an example: <https://49plus.co.uk/udemy-webcomponents/>
(Vanilla JS)

Deployment

How to deploy Web Components as a third party:

- In HTML pages as we have seen.
- NPM
- In Angular, Vue, React etc. There are well documented procedures.

SUMMARY

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wpjs.co.uk

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