A clinical challenge:
To lead or be led by health-IT?
Linköping, Sweden 9-10 Nov 2015
Do we have a suitable rate of change? Does it keep up with available knowledge?

"Knowledge is the enemy of disease. The application of what we know already will have a greater impact on health and disease than any drug or technology likely to be introduced in the next decade."

Sir Muir Grey at MEDINFO 2007
Terminology systems
ICD-10, Snomed CT
ICF etc.

Decision rules
Used in clinical decision support (CDS) systems,
alerts etc.

Documentation models
Structures for forms, fields, documents in health records

PROGRAM OR BE PROGRAMMED
Ten Commands for a Digital Age
Douglas Rushkoff

- [http://www.rushkoff.com/program-or-be-programmed/](http://www.rushkoff.com/program-or-be-programmed/)
- [https://youtu.be/imV3pPLUy1k](https://youtu.be/imV3pPLUy1k) (good 6 minute video)
RUSHKOFF’S PRINCIPLE OF:

III. CHOICE

YOU MAY ALWAYS CHOOSE NONE OF THE ABOVE.

Machines by design split up everything into qualifiers of true or false, yes or no, 1’s or 0’s. In order for us as human beings to more efficiently make use of our technology, we’ve learned to sideline the grey areas between “yes” and “no” in favor of mechanical ultimatums. People mistake fields that ask the user questions for the application trying to promote a unique user experience, when in fact those questions are used to force us into certain categories created by the programmer of that application. Tagging is a new method of choice that truly offers the user a choice.

It all comes down to yes or no when digital technology is concerned. In Chapter 3, Rushkoff explains that digital technology is built on a binary system that articulates the flow of electricity, where no flow means “off” and flow means “on.” Off and on equates to “no-yes,” “0-1.” This binary system forces humans into making choices that are narrow and finite (one or the other, this or that) without any space around them for possibilities. Our reliance on digital technology allows the computers we thought we controlled to make minute choices about how we experience the world in ways we are not even aware of—and meanwhile we try to cram the human experience into the searchable confines of a database. Rushkoff points out that maybe our best choice is not to choose anything at all.

RUSHKOFF’S PRINCIPLE OF:

IV. COMPLEXITY

YOU ARE NEVER COMPLETELY RIGHT.

Our machines are designed to make us function quicker and more efficiently. In doing so, access to information has become democratized. Not as much effort or expertise is required to find the information that we are searching for. In a few clicks we have access to short bits of summarized information that suffices as an answer to our question, rather than the whole, complete, complexity of the answer. We have access to facts, and points of information, rather than actual knowledge and understanding of a subject.

Never again will we not know the answer. Every answer to every question is available for someone to find on the internet. Applications like Google and Wikipedia make information available in a matter of seconds. But are we really learning anything, or are we just becoming dependent on our devices (and the people making them)?

The combination of the first three biases exposes the problem Rushkoff points out in Chapter 4. Because our digital technology reduces our world into an abstraction to be processed, it is "biased" toward a reduction in complexity. Digital technology seeks to level the playing field and holds all human knowledge at the same distance, only one level deep through any Internet search. This reductive nature of digital technology leads us to cherry-pick what we want to know, when we want to know it, and ways to forget the information as soon as we have no use for it. It leads us to develop skills based on accessing this information, rather than using it. And more than anything, it leads us to think we understand the complex world around us when we are only reading part of the map.


You (or at least your less experienced colleague) will need this…

...because of this, and other things…

...but that requires more structure in records.

...and who should create and update those structures and routines that will box your information (or, you, your patient) into more reliably computable form?
How hard can it be?

(...or why you, your EHR vendor or national program will never be able to do and maintain this alone...)
### Dokumentationsmodeller

<table>
<thead>
<tr>
<th>Beskrivning</th>
<th>Antal modeller</th>
<th>h per model</th>
<th>Tot. h</th>
<th>täckningsgrad</th>
<th>Tot. h för 100%</th>
<th>h per manår</th>
<th>Initiala manår</th>
<th>Underhåll per år</th>
<th>Underhåll manår/år</th>
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<td>10%</td>
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<tr>
<td>O.T: kontrakt i nationella tjänsteplattformen</td>
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<td>25000</td>
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<td>500000</td>
<td>1500</td>
<td>333</td>
<td>10%</td>
<td>33,3 <a href="https://oskarthunman.wordpress.com/2015/03/10/vad-kostar-fullstandig-interoperabilitet/">https://oskarthunman.wordpress.com/2015/03/10/vad-kostar-fullstandig-interoperabilitet/</a></td>
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### Beslutsregler (för kliniskt beslutsstöd)

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<td>1500</td>
<td>?</td>
<td>20%</td>
<td>? Stan Huff, HIM</td>
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Approcher som kräver mycket manuell hantering/mapping för att ansluta system till börde sannolikt multiplicerar med antalet vårdgivare/huvudmän eller i vissa fall leverantörer.

Osvenska semesterfria manår i T.Beales beräkningar eftersom 8*5*52=2080. Det skulle alltså bli fler år om man använde svenskare 1500-timmars manår...

Båtman kerade fält = diskutabel siffra.

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- [https://oskarthunman.wordpress.com/2015/03/10/vad-kostar-fullstandig-interoperabilitet/](https://oskarthunman.wordpress.com/2015/03/10/vad-kostar-fullstandig-interoperabilitet/)
- [http://openehr.org/ckm/](http://openehr.org/ckm/)
- [http://arketyper.no/ckm/](http://arketyper.no/ckm/)
Mission possible but never ending (if done right together)
Mission expensive and likely impossible if done wrong.

- **Share & reuse!** Use national and international brain-share
  - International, open, multilingual approaches needed
- **Avoid unnecessary human delays and re-interpretations**
  - Let clinicians do the real detailed modelling using understandable methods, tools & visualisations (supported by informaticians)
  - Use models that can be imported to systems without excessive manual reinterpretations by non-clinicians
- **Keep track of the potential mess**
  - Version controlled formal (computable) models created in tools
  - Use computers & logic to help indexing, detecting inconsistencies etc
- **It’s a socio-technical challenge**, clinicians in global discussion