Automating the ES Level

Daya Nadamuni
Principal Analyst
daya.nadamuni@gartner.com
The Design Continuum: 2003

The System Design Level

The Seams
Concurrent Design
Sequential Design

Applications Software
Embedded Software
Embedded Applications
Firmware

Electronic Design Automation
CAE

PCB Design
IC CAD

Mechanical CAD

Other (Biochemical?)

MEMS
## Design Styles (Includes EDA and ESDT)

<table>
<thead>
<tr>
<th>Design Style</th>
<th>Competitive Advantage</th>
<th>Silicon-centric</th>
<th>Software-centric</th>
<th>Board-centric</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC Design Style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Embedded Design Style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Component-Based Design Style</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
System Design by Design Style: The Reality

ESL Design

SOC Design

Embedded Design

Component-Based Design

PC Board Design

Mechanical Design
ITRS SoC Design Cost Model

The graph illustrates the cost of SoC design over time, with total design cost increasing significantly from 1985 to 2020. The trend shows a logarithmic scale on the y-axis, highlighting the exponential growth in cost.

Dataquest
Gartner