

Will Consumers Accept the Smart Operation of Appliances?

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Intelligent Energy  Europe

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Sample

	Austria	Germany	Italy	Slovenia	United Kingdom
Survey	943	1332	200	200	232
Phone interviews	10	10	-	-	10
Focus groups	2	2	-	3	3

Consumer acceptance

- In theory high acceptance of smart options, but...
- Economic benefits are main trigger
 - Ecological reasons are important too, but secondary or viewed as a positive side effect
 - Low additional costs or subsidies
 - Short amortisation
 - Cheaper tariffs/Reward for each smart operation
- Consumers want to keep full control over their appliances

Consumers would buy smart appliances

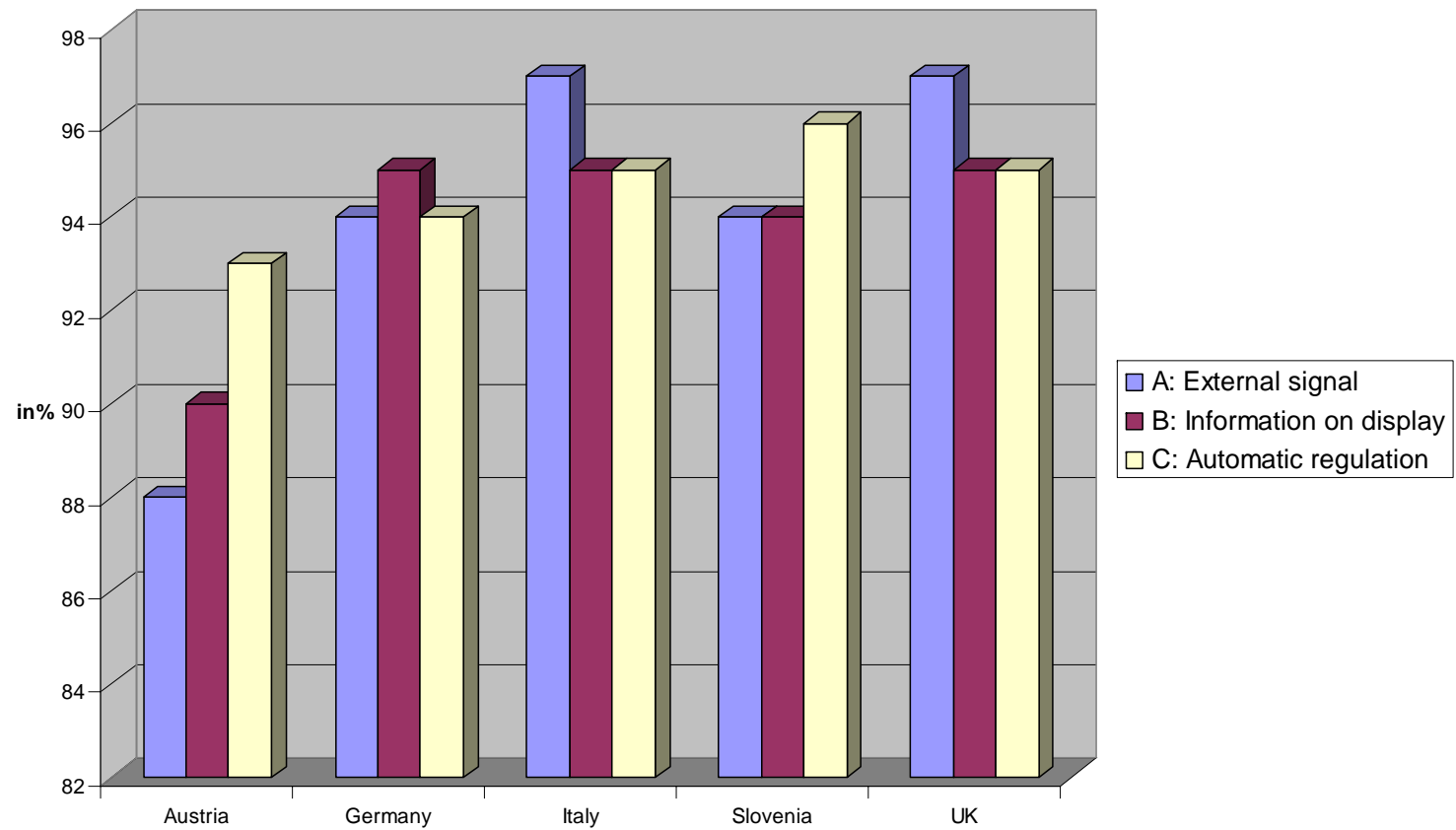
- if technology is perceived as mature and safe
- if they need a new appliance anyway
- if handling is easy
- if comfort is maintained or enhanced

Scenarios for smart use

- **Scenario A:** Operation starts after appliance receives a signal from the energy supplier that cheap and renewable energy is available. It is guaranteed that the process is finished at your desired time.
- **Scenario B:** Consumer receives information via display on the appliance that for financial and ecological reasons it would be better to start it at a specific time later that day.
- **Scenario C:** Appliance is set in “smart operation mode” by pressing a button on it. Short breaks during operation might occur.

Washing machine

Washing machine: Acceptance of smart operation



Washing machine

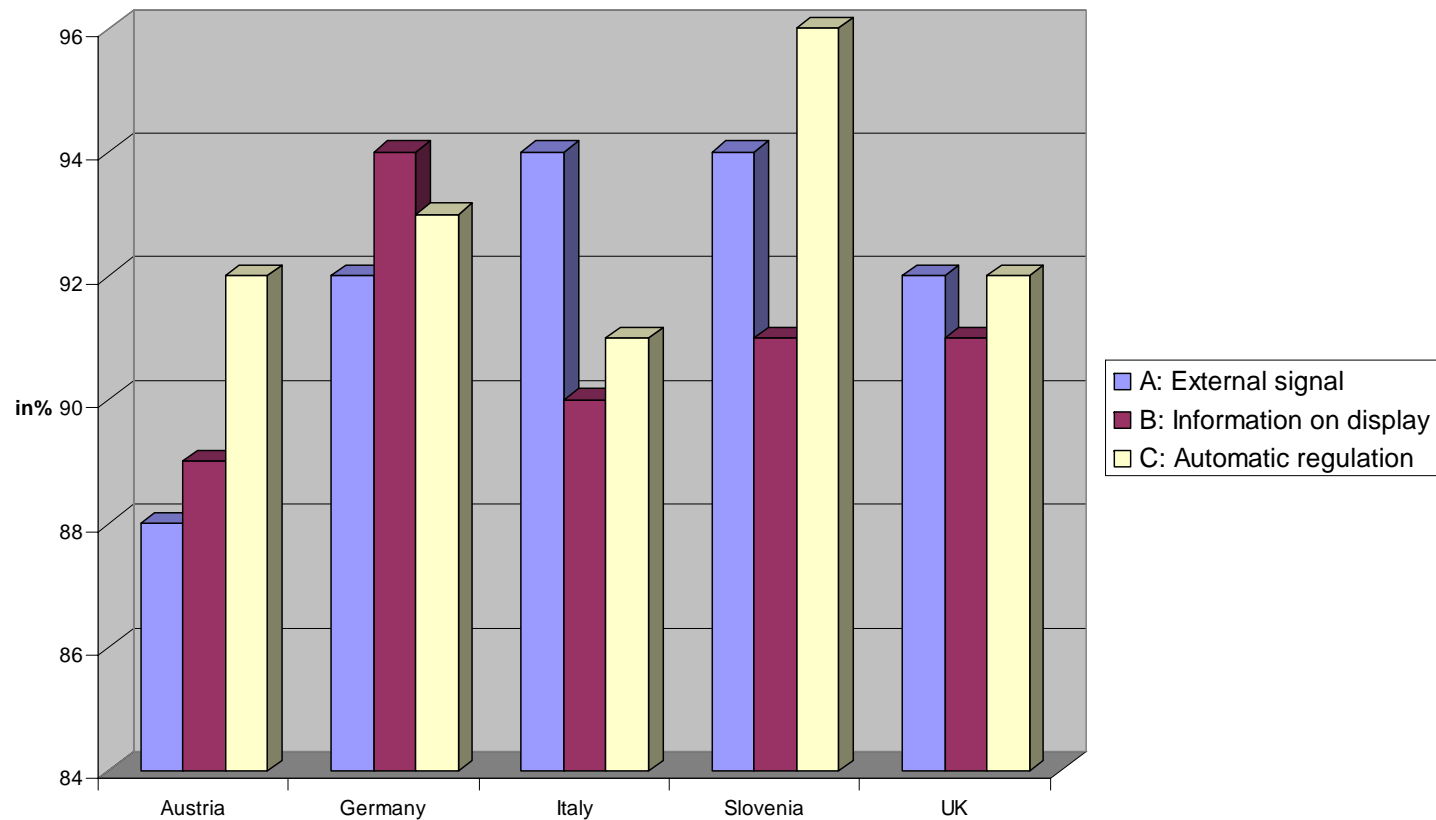
- Barriers:
 - Consumers don't want to leave appliance unattended
 - Consumers don't want to leave wet laundry in the machine
 - Noise during night
- Acceptance depends on financial benefits
- Time interval for smart operation is limited
 - Depends strongly on individual habits
 - Users want to control when operation starts and ends

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(http://www.miele.de/de/haushalt/produkte/1141_4661.htm)



Dish washer

Dish washer: Acceptance of smart operation



Dish washer

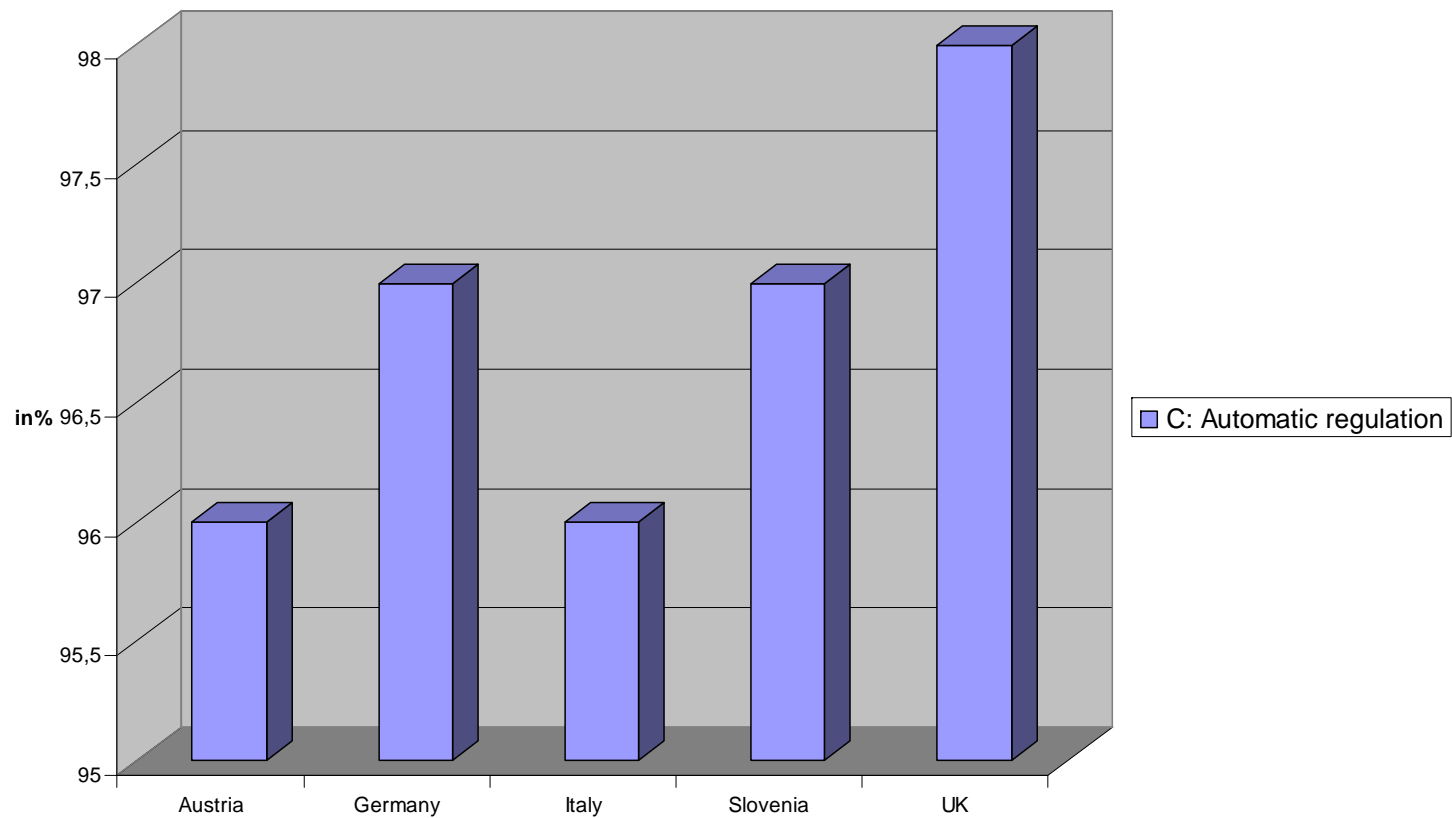
- High potential for smart operation
 - Consumers have less objections in comparison with other appliances
- High potential to use it during night
- Longer time shifts are acceptable
- Smart option might be used up to 80% or 100%



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Refrigerator/Deep freezer

Refrigerator/Deep freezer: Acceptance of smart operation



Senario C

- Highest objections against smart operation of frigde and freezer (health issues)
- Higher acceptance for electric boiler and electric space heating, if comfort is maintained
- Loss of control
- Consumers have doubts, if technology is going to work
- Consumers fear shorter lifecycle of appliances because of interruptions

Objections

- Loss of control
- Health and safety issues (fire, flood, food might be compromised)
- Doubts about maturity of technology
- Scepticism about ecological effects



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Costs

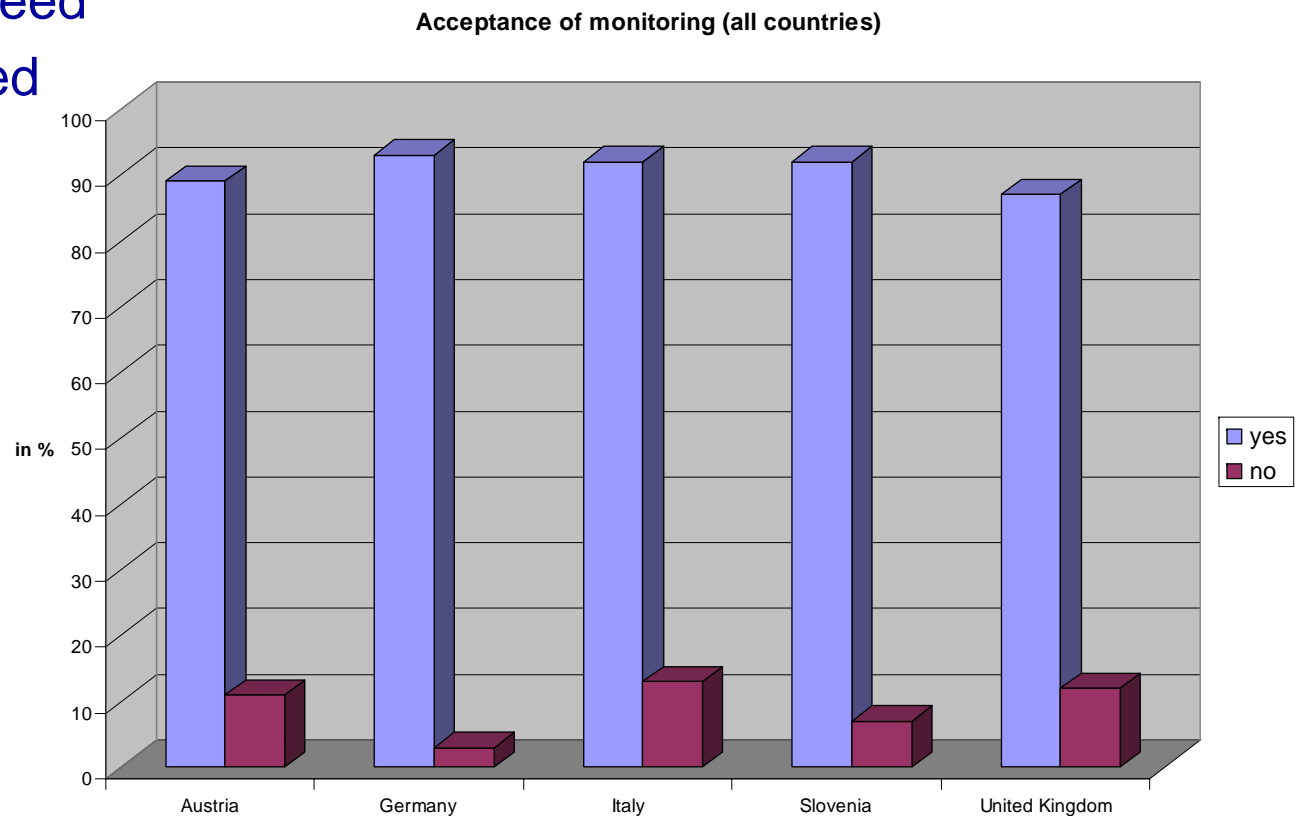
- Consumers would buy smart appliances if they have the same price as conventional appliances (even without financial reward)
- Also higher costs of 5-25 Euro would be acceptable for many users (even without financial reward)
- Higher costs would only be acceptable, with a reasonable pay back time (3 years)



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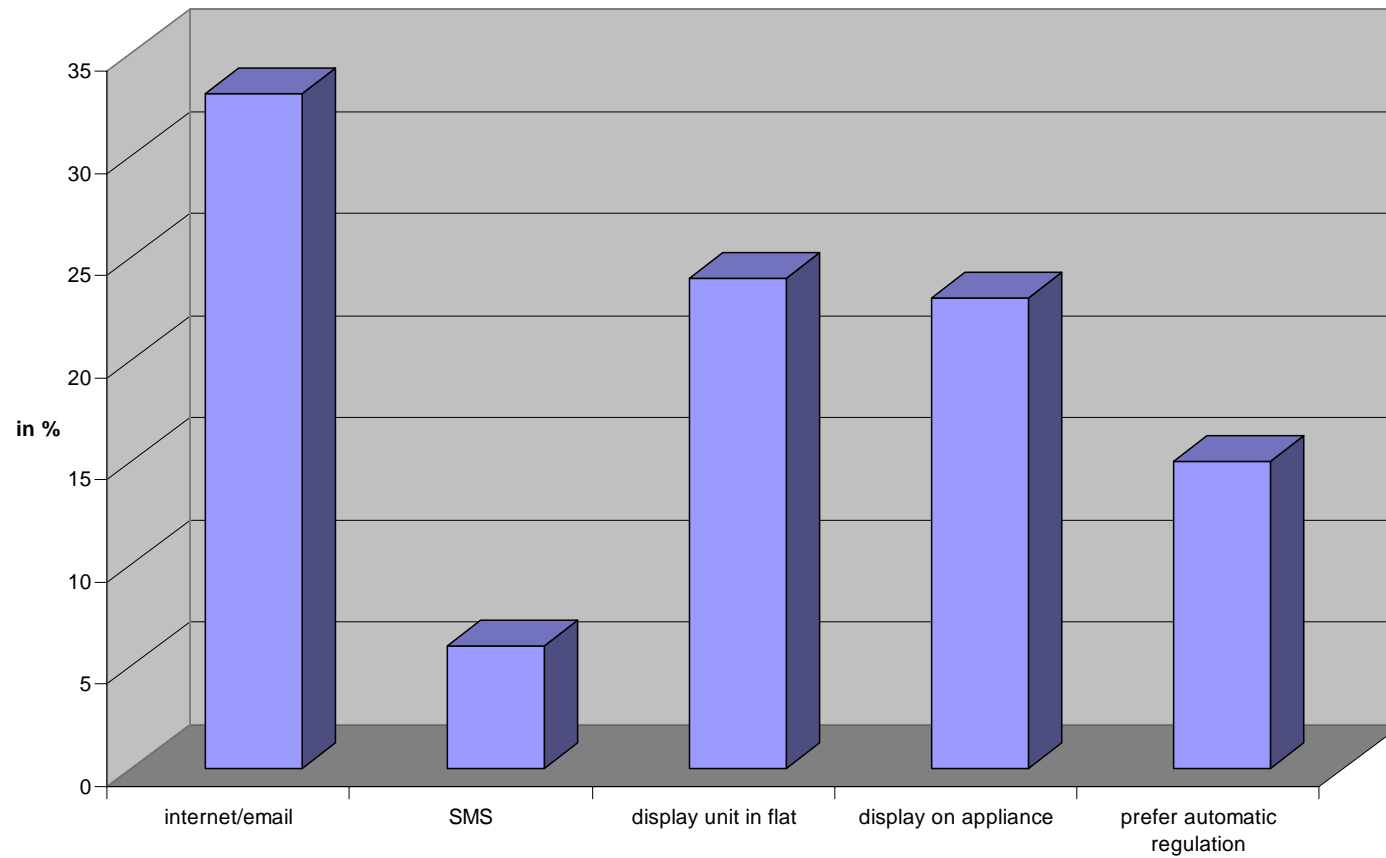
Monitoring

- Highly accepted, if a good data protection is guaranteed
- No incentive expected
- Data should be available for clients



Information about renewable energy

Information about price and availability (all countries)



Desired functions

- More security (e.g. appliance switches off, when too hot, information when machine overcharged, water stop)
- Information about faults
- Good usability
- Attractive design
- Good support



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Thank you for your attention!

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