What is claimed is:

1. A personal hygiene product with a digital element comprising:

a personal hygiene product having an axial length comprising an absorbent core in a form suitable for insertion into a user's body to absorb menstrual fluid;

a conductive sensor assembly disposed within the absorbent core including one or more moisture sensors disposed on a sensor substrate, each moisture sensor being located at a select position along the axial length of said personal hygiene product, each moisture sensor including a moisture sensitive switch connected to a resistor where a resistance value of the moisture sensitive switch is less than a resistance value of the resistor, said conductive sensor assembly generating a signal indicative of saturation level of said personal hygiene product when said conductive sensor assembly is in wetting contact with the menstrual fluid;

a external digital element coupled to said conductive sensor assembly including a substrate having a communication circuit capable of wireless communication with a smart hand held electronic device, a processor, a power source and a first mating connector;

a signal transmission conduit extending from said conductive sensor assembly and interconnecting said conductive sensor assembly to said external digital element.

2. The personal hygiene product with a digital element of Claim 1 wherein said conductive sensor assembly extends substantially the entire axial length of said personal hygiene product.

3. The personal hygiene product with a digital element of Claim 1 wherein the one or more moisture sensitive switches include an interdigitated electrode structure connected to a resistor.

4. The personal hygiene product with a digital element of claim 1 further wherein said signal transmission conduit includes a magnetic connector and said external digital element includes a mating magnetic connector such that said external digital element is magnetically connected to said signal transmission conduit.

5. The personal hygiene product with a digital element of claim 1 wherein the resistors are between 1kΩ and 10kΩ.

6. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing biometric data of the user.

7. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing pH level of the bodily fluid discharge of a user and surrounding environment.

8. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing temperature of the user.

9. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing hormone levels.

10. The personal hygiene product with a digital element of Claim 1 wherein the communication circuit is capable of low power blue tooth wireless communication with a smart hand held device.

11. The personal hygiene product with a digital element of Claim 1 wherein the communication circuit is capable of near field wireless communication with a smart hand held device.

12. The personal hygiene product of Claim 10 or 11 wherein the smart hand held device comprises a hand held personal electronic device capable of interface with a user.

13. The personal hygiene product with a digital element of Claim 12 wherein the smart hand held device includes a receiver and a software application.

14. The personal hygiene product with a digital element of Claim 12 wherein the smart hand held device includes a software application capable of signaling or alerting a user-based quantified data received from said conductive sensor assembly.

15. The personal hygiene product with a digital element of Claim 12 wherein the smart hand held device includes a software application capable of direct order and purchase of additional personal hygiene products through an internet-based consumer services.

16. The personal hygiene product with a digital element of Claim 12 wherein the smart hand held device includes a software application capable of estimating order quantity based on historical data of bodily fluid discharge.

17. The personal hygiene product with a digital element of Claim 12 wherein the smart hand held device includes a software application capable of predicting time and rate of bodily fluid discharge.

18. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit includes a cable.

19. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit includes conductive ink deposited on a flexible substrate.

20. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit is magnetically coupled to said digital element.

Claims

1. A personal hygiene product with a digital element comprising:

a personal hygiene product having an axial length comprising an absorbent core in a form suitable for insertion into a user's body to absorb menstrual fluid;

a conductive sensor assembly disposed within the absorbent core including one or more moisture sensors disposed on a sensor substrate, each moisture sensor being located at a select position along the axial length of said personal hygiene product, each moisture sensor including a moisture sensitive switch connected to a resistor where a resistance value of the moisture sensitive switch is less than a resistance value of the resistor, said conductive sensor assembly generating a signal indicative of saturation level of said personal hygiene product when said conductive sensor assembly is in wetting contact with the menstrual fluid;

an external digital element coupled to said conductive sensor assembly including a substrate having a communication circuit capable of wireless communication with a smart hand held electronic device, a processor, a power source and a first mating connector;

a signal transmission conduit extending from said conductive sensor assembly and interconnecting said conductive sensor assembly to said external digital element wherein said conductive sensor assembly extends substantially the entire axial length of said personal hygiene product.

2. The personal hygiene product with a digital element of Claim 1 wherein the one or more moisture sensitive switches include an interdigitated electrode structure connected to a resistor.

3. The personal hygiene product with a digital element of claim 1 further wherein said signal transmission conduit includes a magnetic connector and said external digital element includes a mating magnetic connector such that said external digital element is magnetically connected to said signal transmission conduit.

4. The personal hygiene product with a digital element of claim 1 wherein the resistors are between 1kΩ and 10kΩ.

5. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing biometric data of the user.

6. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing pH level of the bodily fluid discharge of a user and surrounding environment.

7. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing temperature of the user.

8. The personal hygiene product with a digital element of Claim 1 wherein the conductive sensor assembly is capable of sensing hormone levels.

9. The personal hygiene product with a digital element of Claim 1 wherein the communication circuit is capable of low power blue tooth wireless communication with a smart hand held device.

10. The personal hygiene product with a digital element of Claim 1 wherein the communication circuit is capable of near field wireless communication with a smart hand held device.

11. The personal hygiene product of Claim 9 or 10 wherein the smart hand held device comprises a hand held personal electronic device capable of interface with a user.

12. The personal hygiene product with a digital element of Claim 11 wherein the smart hand held device includes a receiver and a software application.

13. The personal hygiene product with a digital element of Claim 11 wherein the smart hand held device includes a software application capable of signaling or alerting a user-based quantified data received from said conductive sensor assembly.

14. The personal hygiene product with a digital element of Claim 11 wherein the smart hand held device includes a software application capable of direct order and purchase of additional personal hygiene products through an internet-based consumer services.

15. The personal hygiene product with a digital element of Claim 11 wherein the smart hand held device includes a software application capable of estimating order quantity based on historical data of bodily fluid discharge.

16. The personal hygiene product with a digital element of Claim 11 wherein the smart hand held device includes a software application capable of predicting time and rate of bodily fluid discharge.

17. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit includes a cable.

18. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit includes conductive ink deposited on a flexible substrate.

19. The personal hygiene product with a digital element of claim 1 wherein said signal transmission conduit is magnetically coupled to said digital element.